**O-1**

**ATHEROSCLEROSIS AFTER KIDNEY TRANSPLANTATION AND THE ROLE OF FOLIC ACID: A DOUBLE BLIND, RANDOMIZED, PLACEBO CONTROLLED CLINICAL TRIAL**


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We investigated the effect of folic acid supplementation on plasma total homocysteine (tHcy) and carotid intima-media thickness (CIMT) after kidney transplantation. 60 kidney transplantation candidates entered our double blind, randomized, placebo controlled clinical trial. Patients were randomized to receive either 5 mg/day of oral folic acid or equivalent placebo. The main outcome variables were tHcy and CIMT (using B-mode sonography) at baseline and after 2, 4 and 6 months post kidney transplantation. We used independent and paired sample t-test for data analysis. The mean age of the patients was 40.9 ± 10 years and 32 (58.2%) of patients were male. In the control group, the tHcy level at baseline was 19 which reached to 18.7, 19.3 and 20 after 2, 4 and 6 months. At the same times the CIMT measures were 0.81, 0.82, 0.84 and 0.85. The measures were significantly higher than baseline after 4 and 6 months. In the folic acid group the tHcy level at baseline was 18.5 and reached to 14.7, 12.9 and 10.9 after 2, 4 and 6 months. They were significantly lower than baseline at any time after transplantation. At the same times the CIMT measures were 0.73, 0.73, 0.72 and 0.71 which were significantly lower than baseline after 4 and 6 months. tHcy and CIMT were significantly lower in folic acid group after 2 and 4 months, respectively, and continued to be lower thereafter. In conclusion, Folic acid supplementation reduces both tHcy and CIMT shortly after kidney transplantation.

**O-2**

**ACUTE RENAL TRANSPLANT REJECTION AND PRE-TRANSPLANT PRA: FROM PERCENTAGE TO SPECIFICITY**

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Acute rejection is the most critical post-kidney transplant complication occurring in approximately, 30-50 % of recipients. In this study we analyzed the panel reactive antibodies (PRA) as an immunological indicator that may help in predicting acute rejection before the operation. Eighty pre-transplant patients’ sera were collected from the Immunology Laboratory Hamad Al-Essa Kidney and Organ Transplant Center at Sabah Hospital in Kuwait, and analyzed in the Immunology laboratories of the Arabian Gulf University and the Salmaniya Medical Complex in Bahrain. The study populations were divided according to biopsy findings into forty acute rejection group (AR), and forty no rejection (No-R) group. Both groups were analyzed for PRA by a screening Flow cytometry test and class I and II specific Flow-PRA, using Flow-PRA beads. Among the 40 patients in AR group test, only 4 had positive Flow-PRA screening, further analysis by Flow-PRA specific class I and II, showed that they had anti-HLA antibodies against their donor’s HLA. In conclusion, The data suggest that pre-transplant PRA is a useful immunological indicator to be used to predict acute rejection event especially if the test is used to show the anti-HLA antibodies specificity and not only the percentage.
O-3
OUTCOME OF 234 PREGNANCIES IN 140 RENAL TRANSPLANT RECIPIENTS FROM FIVE MIDDLE EASTERN COUNTRIES

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¹King Abdulaziz Medical City, Riyadh, Saudi Arabia, ²Riyadh Armed forces Hospital, Riyadh, Saudi Arabia, ³Jeddah Kidney Centre, Jeddah, Saudi Arabia, ⁴Royal Hospital, Muscat, Oman, ⁵Rizk Hospital, Beirut, Lebanon, ⁶King Abdulaziz Hospital, Jeddah, Saudi Arabia, ⁷Başkent University, Ankara, Turkey, ⁸Al-Mouassat University Hospital, Damascus, Syria, ⁹Security Forces Hospital, Riyadh, Saudi Arabia ¹⁰King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia. This is a retrospective case-note review study investigating the outcome of 234 pregnancies in 140 renal transplant recipients from five different Middle Eastern countries. 74.4% of the pregnancies were successful albeit with high prevalence of pre-term and Caesarean section deliveries (40.8% and 53% respectively.) The mean birthweight was (2458 gms) with 41.3% of the newborns being of low birth weight (<2500 gms). The prevalence of stillbirths were 7.3% and of spontaneous abortion was 19.3 %. Pre-eclampsia and gestational diabetes were observed in 26.1% and 2% of pregnancies respectively. In conclusion, The presence of good allograft function the majority of pregnancies in renal transplant recipients have a good outcome but with increased incidence of pre-eclampsia, reduced gestational age and low birth weights. Patients with baseline serum creatinine of above 150 umol/L have an increased risk of allograft dysfunction resulting from pregnancy.

O-4
THE OUTCOME OF INDUCTION THERAPY WITH MONOCLONAL ANTIBODIES AMONG KIDNEY TRANSPLANTATION PATIENTS IN SHARIATI HOSPITAL

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The usage of anti-IL2r monoclonal antibodies for induction therapy has reduced the frequency of acute rejection. Up to now there are very rare experiences of this treatment among Iranian patients. This study demonstrates the efficacy of induction therapy with Basiliximab and Daclizumab in kidney transplantation among Iranian patients in Shariati Hospital of Tehran. 43 patients were randomly divided into two groups. 18 patients received Basiliximab as a 20 mg dosage at day 0 of transplantation and then a 20 mg dosage 4 days after the transplantation (Group I) and the other 25 patients received Daclizumab as doses of 1 mg/Kg at day 0 of transplantation and then four further doses in two week intervals after the transplantation (Group II). The last serum creatinine level of the patients was used as the comparison factor between the groups. The data was analyzed by mean of SPSS Software version 13.5. The mean age of the patients was 38.5±15.2 years (44.5±16.8 years in group I vs. 34.4±12.7 years in group II). The mean serum creatinine level was 1.4±0.7 (1.3±0.2 in group I vs. 1.5±0.9 in group II, P>0.05). Out of 43 patients, 25.6% (n=11) were experiencing their second or third kidney transplantation (27.8% in group I vs. 24% in group II). The mean creatinine level was lower in patients who were experiencing their first kidney transplantation (P>0.05). There was an acute rejection rate of 11.6% among the patients (22.2% in group I vs. 4% in group II, P>0.05). Among these 43 patients, 4.7% (n=2) were expired after the transplantation (5.6% in group I vs. 4% in group II, P>0.05). The results of this study showed that the usage of monoclonal antibodies for induction therapy reduces the frequency of acute rejection in kidney transplantation among Iranian patients. There were no significant differences between the results of therapy with Basiliximab and Daclizumab. Future comprehensive studies are needed to reveal more aspects of the benefits of these therapies.
O-5
1199 IN SEARCH OF NON-INVASIVE MARKERS FOR CAUSE OF GRAFT DYSFUNCTION AFTER RENAL TRANSPLANTATION

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Hyperexpression of some non invasive markers have been studied previously in setting of acute rejection in renal allograft recipients and necessitated to confirm the observation in larger sample size. We at our institute isolate post transplant and at time of graft dysfunction. Clinical setting includes acute rejections, UTIs, CMV, CAN and DGF. Between July 2007– Feb 2008, 135 samples from 50 consecutive transplant recipients processed for above mentioned genes. We noticed high level expression of cytokines from both cytotoxic and regulatory T cells on first day post transplant, which showed declining pattern of these genes on day 7 and 3 months post transplant. We were also able to demonstrate again rising expression of GB, Perforin and FOX P3 with acute rejections. Results of these findings will be analysed and presented. gene Day 1 post tx Day 7 post tx 3 months post tx GB (RNA copy no. median) 47000 11200 4400 Perforin (RNA copy no. median) 110000 24500 8200 FOX P3 (RNA copy no. median) 77000 44000 00 Conclusion: The findings of our study are of importance when designing studies using the cytokine gene expression profile as a marker for graft dysfunction in setting of renal transplantation.

O-6
LOW DOSE THYMoglobulin VERSUS SIMULECT INDUCTION IN ADULT KIDNEY TRANSPLANT WITH CNI TRIPLE IMMUNOSUPPRESSION: EFFICACY AND SAFETY

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Significant improvements in patient and graft outcomes following kidney transplantation have been made over the past decade. However, the role of induction therapy in these advances remains uncertain. Moreover, the type of induction therapy, whether lymphocyte depleting therapeutics such as Thymoglobulin (TGL) or non-depleting agents such as anti-IL2R antibodies, is also controversial. In the recent reports, full dose TGL (7-10 mg/kg) was associated with higher rates of infection and cancer compared to anti-IL2R antibody induction. In this retrospective study, we compare the efficacy and safety of a lower dose TGL induction therapy (3-5mg/kg total dose, mean dose = 3.64 mg/kg) to Simulect (SM) (20mg given 4 d apart) induction therapy. Between 2000 and 2007, 355 kidney transplant recipients received TGL and 93 patients received SM for induction. Both groups received equal triple immunosuppression therapy consisting of a calcineurin inhibitor, MMF and low-dose prednisone. Demographic data including sex, donor type, age, race, HTN, DM, PRA> 30% and HLA matching was similar in both groups. Mean CIT was longer in TGL group (15+9 vs. 13+9 hours, p=0.04). Both groups had equal hospital stays (TGL 8.3 vs. SM 7.6 days, p= 0.44) and delayed graft function (TGL 28% vs. SM 26%, p= 0.49). Over the past 7 years, 43 patients in the TGL group and 14 patients in the SM group died (p=0.44). Of the 43 deaths in the TGL group, 6 died from infection/sepsis compared to 1 in the SM group (p= 0. 67). All deaths due to infection occurred after 4 months post-transplant and 80% occurred after 2 years. Acute graft rejection occurred in 11% and 13% in TGL and SM group respectively (p=0.6). Graft lost (death censored) occurred in 43 pts in TGL group compared to 9 pts who received SM (p=0.51). In conclusion, low dose TGL and SM were equally effective in promoting graft survival and preventing acute rejection. There was no increased risk of death, infection or cancer in the low-dose TGL group.
PROTECTIVE EFFECT OF PARENTERAL VITAMIN E ON ISCHEMIA-REPERFUSION RENAL INJURY IN RABBITS

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To evaluate the effect of parenteral vitamin E on renal ischemia-reperfusion injury, 20 German rabbits weighting 1.5-1.9 kg were selected and divided into 2 case and control groups. Each group contained 5 male and 5 female rabbits. Intravenous vitamin E is administered to case group five minutes before left renal artery clamping and the same volume of normal saline was injected to control group. Ischemia was maintained for 60 minutes. After 48 hours nephrectomy was performed and kidneys were sent to pathology laboratory. Histopathologic sections were evaluated by the pathologist and graded by the extent of tissue injury to normal, mild and moderate to severe injury. Histopathologic evaluation of the sections revealed that in control group 50 % of sections had signs of moderate to severe injury and 50% categorized as mild injury whereas 50% of case group sections developed no sign of ischemia-reperfusion injury and 50% developed mild injury (p value = 0.033). There is also no significant correlation was found between sex and the extent of cell injury (p value = 0.99). In conclusion, Parenteral injection of vitamin E significantly protects cells against ischemia reperfusion injury.

LIVING KIDNEY DONATION IN SYRIA: DO WE NEED RELEVANT GUIDING PRINCIPLES OR TO APPLY THEM?

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In principle, the use of living donors is unanimously accepted all over the world. There is no conclusive argument that could justify a general exclusion of unrelated donors. Available evidence suggests that decisions about the acceptability of living unrelated donors should be made on a case-by-case basis. To illustrate the characteristics of living kidney donors in Syria in order to better understand the circumstances of living related and unrelated donation and whether we need relevant guiding principles or just to apply them, a retrospective analysis of the medical records of 933 kidney donors from different hospitals in Damascus during the years 2005, 2006, and 2007 was performed. The following characteristics were recorded: blood relation, age, gender, and difference in age between recipient and donor. A total of 933 kidney donors were enrolled in this study, of them 454 donors (49%) had been operated in public hospitals and 479 donors (51%) in private hospitals. There were 666 unrelated donors (71%) and 267 related donors (29%). When we looked at this issue separately between private and public hospitals, we realized that in private hospital, 92% of donors (439 cases) were unrelated compared to 50% (227 cases) in public hospitals, and only 8% of donors (40 cases) in private sector were blood-related donors compared to 50% (227 cases) in public hospitals. The analysis of donor characteristics has shown male predominance with 65% of the total donors being males and up to 87% of the unrelated donors were also males, however there was no gender predominance when it concerns the related donors who were equally distributed between males and females. With regards to the donor age, more than 90% of the unrelated donors were below the age of 40 years compared to 69% of the related donors. The majority of unrelated group were aged between 30-40 years while the majority of related group were younger and aged between 18-30 years. 46% of donors were younger than their recipients with a mean difference in age of 14 years. 54% of donors were older than their recipients with a mean difference in age of 12 years. Male to male donation was encountered in 40% of cases (the most frequent) compared to only 11% in female to female donation (the least frequent). Male to female and female to male were each seen in 25% of cases. In conclusion, The vast majority of living kidney donors in private hospitals were unrelated to recipients, one has to keep skepticism about the claimed altruistic nature of the unrelated donation act in these settings, and consequently to urge the health authorities and the transplant professional to create a system that incorporate the cultural and legal resources to provide sufficient controls, checks and balances to keep it from getting on the “slippery slope” towards commercialism which could undermine public trust in the transplant system.
Almost all patients transplanted for hepatitis C develop recurrent infection in the liver allograft and are at risk of graft fibrosis. The course of hepatitis C after liver transplantation is still unpredictable. Pegylated interferon in combination with Ribavirin is the only hope for treating hepatitis C recurrence with sustained viral response of 27%. Evaluate our experience in treating hepatitis C recurrence after liver transplantation, finding out predictive factors for response to therapy. From December 2006 through June 2008, two liver recipients with recurrent hepatitis C were treated for 48 weeks with Pegylated interferon combined with Ribavirin. Baseline quantitative PCR, HCV genotype, and liver enzymes were known for both patients. Prognostic factors for hepatitis C recurrence, and predictor factors for response to therapy were assessed in both patients. Case 1 was transplanted in China from cadaver donor, and case 2 was transplanted in Libya from live donor. Both finished the course of therapy with negative PCR at end of therapy (EOT). Case 1 relapsed after finishing therapy, with histological evidence progressive hepatitis C (A2F2), case 2 had sustained viral response (SVR). Different positive and negative predictive factors for HCV recurrence and response to therapy were evaluated. In conclusion, Factors that may adversely affect outcome of recurrent hepatitis C in liver recipients are; recipient age, genotype 1 or 4, episodes of rejection with multiple steroid pulses, warm ischemia >60 minutes, presence of diabetes mellitus. Delayed treatment, genotype, and inadequate Ribavirin dose are negative predictive factor for response to therapy for recurrent hepatitis C.

Hepatitis C recurrence post-transplantation is common although the degree of histologic recurrence is variable. The cumulative probability of progressing to graft cirrhosis is 30% at 5 years. Predictors of recurrence may include older donor age, immunosuppressive regimen, bolus steroid use, allograft steatosis, viral load and genotype. The donor risk index (DRI), comprising 8 donor risk factors, was recently described as a potential objective tool to guide organ acceptance. This index was derived from donor characteristics that predicted graft failure. The goal of this study was to determine whether DRI and MELD score at time of transplantation have an effect on early hepatitis C recurrence post transplantation. Retrospective review of patients transplanted for hepatitis C at London Health Sciences Centre in London, Ontario between 1999-2004. Early recurrence was defined as presence of fibrosis (≥ stage 2) on liver biopsy at 2 years or less. Donor characteristic were collected to calculate the DRI as published by Feng et al. Uncorrected MELD score was calculated based on day of transplantation. Results 31 recipients (Group A) with liver biopsy evidence of early recurrence were compared to 28 recipient that had no histology evidence of HCV recurrence (Group B). The mean DRI was statistically higher in Group A (1.66±0.407) than Group B (1.39 ± 0.294) (p-value of 0.0053). Mean donor age was 49 in Group A and 33 in Group B (p = 0.0002). Average uncorrected MELD score was not statistically different (16.6 ± 6.02 vs. 17.1±5.8 p = NS). In Conclusion, DRI and age are predictive of early histological hepatitis C recurrence post transplantation. Uncorrected MELD score at time of transplantation has no influence on early HCV recurrence.
O-11

STERIOD RESISTANCE ACUTE REJECTIONS AFTER LIVER TRANSPLANT

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Liver transplantation is the definitive treatment for end stage liver disease. Although effective immunosuppressants are available, steroid resistance acute rejection (SRAR) can be encountered. In this study we evaluate diagnosis and treatment of SRAR at our center. Since September 2001, 238 liver transplants were performed for 234 patients. Seventy-nine (33.7%) patients developed 98 acute rejection episodes after liver transplant. Eleven (11.2%) of these 98 acute rejection episodes were SRAR, which were analyzed retrospectively. All patients received tacrolimus based immunosuppressant therapy. Liver biopsy was performed for confirmation of acute rejection after vascular or biliary complications were excluded. High dose methylprednisolone was administered for acute rejections. Acute rejection was defined as SRAR if there was no response to steroids. After confirming SRAR by second biopsy, the patients received Antithymocyte globulin (ATG) for 10-14 days with ganciclovir prophylaxis. There were 11 patients (7 male, 4 female; 8 10.7). The mean follow up period of SRAR pediatric, 3 adult; mean age 14.6 19.1 months (range 5-53 years). The mean time from patients transplantation to SRAR was 19.4 66.9 days (range 20-181 days). All patientstransplantation to SRAR had responded to steroid therapy, but 2 patients required retransplantation 7 and 8 months after SRAR therapy due to chronic rejection. These 2 patients died 12 and 32 days after their Retransplant due to sepsis and sudden cardiac arrest. Mean total bilirubin, Aspartate aminotransferase and Alanine aminotransferase levels decreased from 235.2 IU/L to 2.4 132.1 IU/L, and 266.7 5 mg/dl, 171.6 12.6 to 28.8 IU/L 30.5 IU/L, and 56.3 2.3 mg/dl, 45.7 respectively. Minor side effects were observed in 6 patients. We did not encounter serious infections and pulmonary edema. In conclusion, according to our experience ATG can be considered as a good therapeutic option in SRAR with acceptable side effects.

O-12

EVALUATION OF THE VALUE OF SERUM SODIUM IN PREDICTING SHORT TERM SURVIVAL IN CIRRHOTIC PATIENTS LISTED FOR LIVER TRANSPLANTATION IN ORGAN TRANSPLANTATION CENTER OF SHIRAZ UNIVERSITY OF MEDICAL SCIENCES


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The current policy for selecting the patients for liver transplantation is “The sickest is the first”. Model for End-Stage Liver Disease (MELD) score is one of the best formula have ever been developed for this purpose. However other factors as serum sodium may be of value in predicting early mortality of such patients, beside it. From September 1998-June 2007 all cirrhotic patients over 14-year-old listed to receive liver transplantation in the Organ Transplantation Center of Shiraz University of Medical Sciences, who had sufficient data entered the study and were followed for at least 6 months. Of 612 listed patients, 51 were transplanted and 55 died within the first 3 months and also 29 transplantations and 25 deaths occurred in the next 3 months. Both MELD score and serum sodium were independent predictors of early mortality. In bivariate analysis using these two variables serum sodium remained as a significant predictor of mortality within 90 and 180 days. Again in bivariate analysis serum sodium <130mEq/L had significant strength to predict patients mortality in these period of time beside MELD score. In conclusion, Serum sodium level in addition to MELD score is a significant predictor of early mortality in patients listed for liver transplantation.

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The only curative therapy for end-stage liver disease is transplantation, but due to shortage of available donor livers, waiting list mortality is high. This study aimed to evaluate the outcome and characteristics of the patients listed for liver transplantation in Shiraz, southern Iran during the period April 2004- March 2007. A retrospective review of the medical records of all chronic liver disease patients aged 14 years or older who were listed for liver transplantation in Shiraz Organ Transplant Center at Nemazee Hospital between April 2004 and March 2007 was conducted. Hospital records were used to retrieve demographic, clinical and laboratory data. Records of the referring gastroenterologists provided information on etiology and complications of liver disease. The patients were followed up at the end of study period by visit or telephone. 646 patients were listed for liver transplant during April 2004-March 2007. Hepatitis B was the most common etiology of liver disease (31.2%). 144 patients (22.3%) underwent liver transplant, 166 (25.7%) died while waiting for transplant, and the mean waiting period for transplant was 6.6 months. Getting a transplant was correlated with etiology of liver disease and Rh blood group but had no significant association with gender or ABO blood type. Transplantation significantly improved survival. Among non-transplanted patients, survival was lower in those who had history of encephalopathy, SBP or uncontrolled ascitis and in patients of CTP class C and/or MELD score≥15. In conclusion, Hepatitis B virus is the most common cause of end-stage chronic liver disease in the waiting list for liver transplant in Shiraz, southern Iran. Patients with MELD score≥15 especially with a history of SBP, hepatic encephalopathy or uncontrolled ascites are recommended for waiting list enrollment. To shorten waiting time for transplant, we need to increase the number of living donor liver transplantations.

THE EXCELLENT RESULTS OF LIVER TRANSPLANTATION FOR TYROSINEMIA IN IRAN: A SINGLE CENTER EXPERIENCE

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Tyrosinemia could arise from both liver failure of any causes or from an inborn error of tyrosine metabolism and mainly lead to death in case of no treatment. The best choice of treatment especially in those with critical conditions is liver transplantation. In this study we report the outcome of liver transplantation in patients with tyrosinemia in our institution. Between January 2007 and March 2008, 9 patients with tyrosinemia and liver cirrhosis, which were confirmed by detecting plasma succinylacetone, have been receiving liver transplantation. Seven of 9 patients had received livers from living donors and the rest from deceased donors. Two patients were re-operated due to post-operative internal bleeding, and one patient developed wound infection. The mean duration of hospital stay in these patients was $17\pm 6.02$ days. Diagnosis of acute rejection was made for 4 patients clinically and biochemically and have been treated with pulse of methyl prednisolone. One patient developed post transplant lymphoproliferative disorder and died. In conclusion, Despite of some complications, liver transplantation in our patients as the same as the other reports could be presented as an effective treatment for tyrosinemia resulting in clinical and biochemical improvement with good quality of life.
O-15
THE ROLE OF POST-REPERFUSION BIOPSY IN THE ERA OF EXTENDED CRITERIA DONOR (ECD): A PROSPECTIVE STUDY ON CLINICOPATHOLOGIC CORRELATION AND FOLLOW-UP ANALYSIS OF 50 LIVER TRANSPLANT PATIENTS

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Organ shortage drives transplant surgeons to consider organs with extended criteria for transplant. A PRB at the time of transplant would serve the purpose of detecting existing pathology as well as obtaining baseline morphology for comparison with follow-up biopsies (FUBs). In this prospective study, we evaluate how and to what extent morphological changes in PRBs correlate with histologic findings in FUBs and clinical outcomes. Between January-July 2007, total of 50 liver transplants were performed in our center. Histologic sections of PRBs and FUBs (including H E, trichrome and iron stains) were examined on a routine basis. All patients were followed till September 2008 and relevant clinical and laboratory data were recorded. Mean follow-up time was 518.4 days (range: 431-608). Mean time between PRB and FUBs was 94.9 days (SD + 21.67) for the second FUB (16 cases), and 235 days (SD + 123.85) for the third FUB (8 cases). Major histologic findings in PRBs included: preservation injury (21 cases), macrovesicular steatosis (mild to moderate: 12 cases; severe: 4 cases), portal triad chronic inflammation and fibrosis (15 cases), and pericellular fibrosis (3 cases). Major histologic findings in FUBs included: acute cellular rejection (6 definite and 4 indeterminate cases), recurrent hepatitis C (6 cases), centrilobular necrosis (4 cases), and cholestasis (5 cases). After comparing pathological findings in PRBs and FUBs and correlating the findings with clinical and lab data, the following observations were made: 1) None of the major pathologic findings in PRBs persisted in FUBs, regardless of cause of end stage liver disease; 2) In patients with and without any type of pathology in PRBs, no significant differences were found in liver function tests, length of hospital stay, and survival rates. In conclusion, Our experience indicates: 1) Transplanting organs with pre-existing pathologic changes does not adversely affect the outcomes, and 2) PRBs can reliably serve as a baseline measure of existing pathology in donor organs. Given the low morbidity of such biopsies and continued expansion of donor criteria, having PRB is appropriate to better understand the long-term impact of baseline pathologic findings.

O-16
NEUROMUSCULAR COMPLICATIONS AFTER LIVER TRANSPLANTATION IN CHILDREN

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Neuromuscular complications are significant causes of morbidity in children after liver transplantation. This study was performed to evaluate the neuromuscular complications in children after liver transplantation. All children aged less than 18 year who underwent liver transplantation between June 2004 and June 2007 included in this prospective study. There were 30 (62.5%) boys and 18 (37.5%) girls with a mean age of 9.6 years (range, 1-18 year) and a mean duration of follow up of 15.6 months (range, 12-48 months). The most common indications for liver transplantation were biliary atresia (n=12, 25%), Wilson disease (n=7, 14.6%), tyrosinemia (n=7, 14.6%), progressive familial intrahepatic cholestasis (n=6, 12.5%), and autoimmune cirrhosis (n=5, 10.4%). Twenty-nine (60.4%) patients received graft from living donors and 16 (33.3%) and 3 (6.2%) cases received whole graft and split transplantation from deceased donor. Immunosuppressive medication consisted of tacrolimus (n=44, 91.7%) or cyclosporine (n=4, 8.3%) combined with mycophenolate mofetil (n=33, 68.7%) and prednisolone (n=18, 37.5%). The most common neuromuscular complications were tremor (n=8, 16.7%), convulsion and insomnia (n=6, 12.5%), headache and muscle cramps (n=5, 10.4%) and paresthesia and weakness (n=3, 6.2%). We concluded that the most common neurologic complication after liver transplantation in children in contrast to other studies was tremor just like adult patients and this may be due to higher rate of tacrolimus usage in our patients.
During the past decades, lung transplantation has been widely introduced as an effective treatment in patient with end-stage lung disease. However, infections and rejection have been the main complicating factors. In this study, we studied the infectious complications in patients who had received lung transplantation in Masih Daneshvari Hospital which is the main center for lung transplantation in Iran between 2001-2008. In a 7-year period, totally, 20 lung transplantsations were carried out in our center of whom the transplantation was successful in 13 cases and they survived at least for the first week post-transplant. Having performed the follow-up in this population, overall, 54 episodes of infections were detected and registered. Infectious episodes were studied according to the time of infection (Early: <1 month; Middle: 1-6 months; Late: >6 months post-transplant). The most common involved organ was respiratory system which accounted for 83.3% of infections. Notably, all the infections occurred in the Early period were Respiratory infections. Also, the bacteria were the most common cause prompting infection in all timing periods. According to our findings, there is a special pattern of infections with respect to the culprit causative agents: Elapsing from Early Period toward Late Period, the frequency of viral infections increases while the incidence of fungal infections decreases, so that more than 50% of fungal infections occurred after the first month post-transplant. Moreover, infections due to Aspergillus accounted as 75% of fungal infections. The most common bacteria causing infections in our patients were Pseudomonas, Acinetobacter, and Staph Aureus, in a decreasing order respectively. With regard to detecting the culprit organism, Bronchoscopy with Broncholaveolar lavage(BAL) and tracheal aspirates accounted as the two most frequent routes while they yielded the responsible organisms in 56.2% of infectious episodes. Of the total 54 episodes, the infection was successfully cured in 45(83.3%) episodes. However, of these 13 patients transplantation resulted in death in 7 cases in which the infection was either present concomitantly with transplant rejection (6 cases) or alone (1 case). With regard to the outcomes, fungal infections accounted as the most deadly causes so that mortality occurred in 25% of these infections. Furthermore, 33.3% of Aspergillus infections lead to death and Pseudomonas and Acinetobacter resulted in death in 30% and 28.6% respectively. Surprisingly, the drug resistance was significantly frequent especially in gram negative rods. In conclusion, infections along with transplant rejection are the most common complications and account as the major causes of death in lung transplantation. Fungal infections, due to their high mortality rate and also somewhat sophisticated treatment should be addressed as important issue in lung transplant recipients. As well, gram negative rods with high degree of drug resistance make the problem complicated. Therefore, implementing preventive measures, efficient infection control, early diagnosis, and appropriate treatment are of importance to obtain favorable outcomes in these patients.
O-19
INFLUENCE OF ABO-COMPATIBLE TRANSPLANTATION ON LONG-TERM OUTCOME IN CARDIAC TRANSPLANT RECIPIENTS

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Cardiac transplantation is best therapeutical option for end-stage heart disease. Previous reports on the influence of the ABO system on cardiac transplant outcome indicate that blood group identical transplants have a better outcome than blood group compatible transplants. As the demand for donor organs largely exceeds the supply, it is our policy to use blood group compatible local donors for transplantation if no suitable ABO identical recipient is available. The aim of this study was to determine outcome after blood group compatible transplants. Between 1984-2003 a total of 915 cardiac transplants have been performed at our center. Median follow-up was 127 months. Patients were analyzed according blood group matching (AB0 identical (I) vs. AB0 compatible (C)). Moreover subgroup analyses within the different groups were made to identify potential differences. Groups were analyzed for survival, graft rejection and graft vasculopathy (CAD). Kaplan-Meier analysis was used and log-rank test was performed to detect differences. A total of 81 transplants (8.9%) were blood group compatible. The majority (n=32) were 0A transplants (40%) followed by 0B (n=19; 23%), AAB (n=17; 21%), BAB (n=7; 9%) and 0AB (n=6; 7%). Overall survival comparison showed no significant difference in long-term survival (10-year) between the two groups (I: 52.2% vs. C: 42.1%; p: n.s.). Yet there was a clear trend towards lower survival within the C group. (10a survival: 0B: 73.3%, AAB:58.8%, BAB:32.1%, 0A:27.6%; p = 0.0568). In contrast, Freedom from acute rejection was significantly different between I and C groups (71.4% vs. 49.9%; p<0.0001). There was no difference in incidence of CAD (62.5% vs. 60.3%) as well as severe CAD (76.8% vs. 77.9%). In conclusion: The results of our analysis show that ABO blood group compatible transplants have similar outcomes in behalf of survival and CAD as ABO identical transplant. Yet rejection rates are significantly higher in ABO compatible transplants. This finding needs further investigation.

O-20
SITE OF HETEROTOPIC TRACHEAL ALLOGRAFT IMPLANTATION AFFECTS GRAFT REJECTION PATTERN

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Obliterative bronchiolitis (OB) is a major complication of lung transplantation, affecting about 50% of patients who survive beyond 3 months. The murine heterotopic tracheal transplantation model has been developed for investigation of the etiology, pathogenesis and prevention of OB. Previous data showed no differences between different sites of tracheal graft implantation, but did not study an intramuscular placement. This pilot study compared 2 sites of heterotopic tracheal allograft transplantation in mice. Donor-recipient strain combinations were completely disparate across MHC and minor antigens. 16 C3H/He (C3H; H-2) mice received tracheal grafts from C3H donors (isograft) and BALB/c (BALB; H-2) donors (allografts) implanted without primary vascularization in a dorsal subcutaneous pouch (SC) (n=5), or within the pectoralis major muscle (IM) (n=11). Six C3H mice were recipients of tracheal grafts from C3H, BALB, and C57BL/6 (B6; H-2) implanted in the dorsal SC position. All grafts were removed 28 days after transplantation and examined for microscopic evidence of acute and chronic rejection. No isografts showed rejection. Mean luminal occlusion in BALB allografts placed in the IM site was 35.5% comparede to 86.0% for BALB allografts in the SC position (P<0.0008). In animals that received multiple grafts. Mean luminal occlusion of BALB allografts was 80%, however B6 allografts showed much less occlusion: 5.3% (P<0.0007). In conclusion, in contrast to previous data, our pilot data suggest that site of airway allograft implantation affects obliterative bronchiolitis development. Although isografts showed no apparent differences between implantation sites, allografts implanted in the IM site showed significantly less occlusion compared to SC implantation. Possibly due to rich muscle blood circulation, supporting of role of ischemia as a predisposing factor in development and progression of OB. In contrast to BALB allografts, B6 allografts showed significantly less occlusion by day 28, reflecting possible strain-related differences in immunogenicity.
O-21
EVALUATION OF THE STRAIN TISSUE DOPPLER ECHOCARDIOGRAPHIC INDICES IN HEART ALLOGRAFT REJECTION

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The main way to detect heart transplant rejection is endomyocardial biopsy (EMB), an invasive and time/money consuming procedure. This study was performed to consider diagnostic value of the newly emerged trans-thoracic tissue Doppler echocardiography (TDI) indices in detection of heart transplant rejection. Twenty consecutive transplant recipients were simultaneously assessed by EMB and TDI at certain intervals from the surgery. 50 TDI studies and 50 EMBs were performed totally. The results were analyzed to determine the relation between TDI values (“Strain” and “Time to Systole”) and histopathological rejection. Accuracy of these indices in diagnosis of rejection was also computed. Histopathological exam revealed no significant rejection in 31 and significant rejection in 19. Septum “Strain” was significantly reduced with rejection; 11.8 versus 15.9 in non-rejecting group (P<0.01). There was also a significant reduction in Septum “Time to Systole” in rejected hearts; 72.7ms vs. 85.7ms in not-rejected hearts (P<0.01). Accuracy of septal indices was better than right ventricular or Lateral “Strain” and “Time to Systole” for detection of allograft rejection. In conclusion, These results suggest that Strain TDI has the potential to be used as a complementary or alternative method for detection of heart transplant rejection. Septal indices are more accurate than others. More investigations are needed to confirm this capability and also to determine the best applying schedule.

O-22
ENDOMYOCARDIAL BIOPSY AFTER HEART TRANSPLANTATION, IS THERE ANY ALTERNATIVE FOR IT OR NOT?

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Despite the use of increasingly specific immunosuppressive therapy, rejection remains the leading cause of death in cardiac transplant patients. Rejection is the leading cause of mortality in the first year after transplantation, and accounts for approximately 20% of all death. End myocardial biopsy already is the gold standard for early detection and monitoring of cardiac rejection. However, the approach is invasive and not suitable for routine use. An understanding of the nature and effects of rejection is handicapped by diversity of opinions about the appropriate definition. Rejection has been classified variously as histological, functional and clinical. Regardless of their definitions in academic textbooks, threshold should be very low, even nonspecific symptoms may actually herald onset of rejection. Rejection is an ongoing process that is suppressed, modified and ameliorated by immunosuppressive drugs. Even though biopsy still is the gold standard in follow up survival of this group of patients, but one should consider that biopsy result can be misleading if specimen not obtained and not interpreted in an appropriate manner. There are widespread investigations around the world to find another safer, noninvasive, and less expensive and also as sensitive and specific as biopsy. In this way, we think combined simultaneous measuring of serum cyclosporine level, CD4/CD8 ratio and echocardiography in follow up survival can reduce the frequency of and more advisable endomyocardial biopsy. In other words, the aim of our study was to respond below question. Is there any correlation between serum cyclosporine level, CD4/CD8 ratio, echocardiography and endomyocardial biopsy results? This study have been performing in Imam Khomeini Tehran university hospital on our last 32 (6 female and 26 male, with mean age of 42± 9 yo) patients since January 2007 to September 2008 who underwent orthotopic bicaval heart transplantation during 20 months follow up as yet. The most common indication for transplantation was advanced intractable nonresponsive heart failure due to idiopathic dilated cardiomyopathy. Blood sample was obtained to measure serum cyclosporine and CD4/CD8 ratio 2 weeks after transplantation just before discharge and simultaneous echocardiography and endomyocardial biopsy. This sequence was repeated 2 weeks after discharge again and results were recorded in files. Biopsy result was according to ISHLT standardized cardiac biopsy grading, acute cellular rejection, 2004. Echocardiography was also performed by the same well-experienced cardiologist.
**O-23**

**OSTEOPROTEGERIN IN CHILDREN ON DIALYSIS AND RENAL TRANSPLANTATION RECIPIENTS**


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Osteoprotegerin (OPG), a natural decoy receptor for osteoclast differentiation factor, is produced by osteoblasts in response to PTH. OPG and its ligand RANKL constitute a complex mediator system involved in the regulation of bone resorption, probably playing an important role in the homeostasis of bone turnover. Osteoprotegerin has emerged as an independent predictive factor of atherosclerosis and vascular calcification in hemodialysis patients. Sparse data are available on the evolution of osteoprotegerin after renal transplantation. The aim of this study was to investigate the importance of OPG in pediatric dialysis patients and renal transplantation recipients. Twenty-six patients on chronic hemodialysis (HD) (14 males, 12 females, aged 15.1±2.2 years) and 18 patients on continuous ambulatory peritoneal dialysis (CAPD) (8 males, 10 females, aged 13.7±3.5 years), 20 renal transplantation recipients (11 males, 9 females aged 15.3±2.8 years), and 18 gender and age matched healthy children were included in the study. Laboratory investigation included complete blood count, biochemical tests in serum, C-reactive protein, fibrinogen, ceruloplasmin, albumin, prealbumin and intact parathormon levels (PTH). Serum OPG levels were measured by enzyme-linked immunosorbent assay. The mean OPG levels of dialysis patients were significantly higher than those of the renal tx group and the control group (p<0.05). The mean OPG levels were similar in HD and CAPD patients (p>0.05). Also, there was no significant difference between OPG levels of the renal tx group and the control group (p>0.05). There was significant correlation between OPG levels and calcium (Ca) and alkaline phosphatase levels in all patients. We couldn’t find any correlation between OPG levels and inflammation markers such as C-reactive protein, fibrinogen and ceruloplasmin levels in all groups. There was a negative correlation between OPG levels and age in the renal transplant recipients, but we did not observe any relation between OPG levels and sex, duration of transplantation, hypertension, dyslipidemia, immunosuppressive therapy, and glomerular filtration rate. This study demonstrates that kidney transplantation has improving effect on renal bone disease. However, these preliminary results should be confirmed with further studies.

**O-24**

**HYPERTENSION IN CHILDREN FOLLOWING KIDNEY TRANSPLANTATION**


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Hypertension (HTN) is commonly encountered following kidney transplantation (KT). Some of the responsible factors are transplant medications, allograft dysfunction, allograft renal artery stenosis and the primary renal diseases. HTN is a cause of decreased allograft survival. In this study, prevalence of HTN is evaluated in children following KT. Clinical records of all children who had been transplanted in our center since 1992 were evaluated in their last referral to their in-charge nephrologist. HTN was defined by using new guidelines (JNC7) and children were considered hypertensive if they were on antihypertensive medications and or had blood pressure (BP) >90th percentile for age, height, and sex. From 216 children who were ≤19 years old when kidney transplanted (1992 to 2007), 138 children were followed by pediatric nephrologists for mean of 59.2±39 months. There were 79 (57.2%) boys with male to female ratio of 1.33. The age range at time of KT was 3-19 years with a Mean ± SD of 13.6±3.5. The minimum weight was 10 kg. Donor ages were 1 to 52 years with a mean of 24.6±12.5 with 41 parents, 9 siblings and other relatives, 67 deceased and 21 unrelated. Their Primary renal diseases consisted of glomerular diseases, hereditary diseases, reflux-obstruction dysplasia, stone and unknown in 26 (19%), 47 (34%), 58 (42%), 2 (1.5%) and 5 (3.5%) respectively. The mode of dialysis before transplantation was hemodialysis in the majority of cases (85.5%) and preemptive transplantation was done in 12.1%. HTN was observed in 76 children (55%). Regarding primary renal diseases, HTN occurred in 16(61.5%), 26 (55.3%) and 31(53.44%) of the patients in glomerular diseases, hereditary diseases and reflux-obstruction group respectively. In 29 patients, more than one drug was used to control BP. Twenty one (67.7%) of 32 patients with a follow-up period of 6-36 months, 27(60%) of 45 patients with follow-up period of 37-72 months and 29(47.5%) of 61 with follow-up period of more than 72 months were hypertensive. In conclusion, Hypertension is very common following kidney transplantation in children and the rate of HTN is inversely related to duration of follow-up.
Various immunological, metabolic, and technical factors render pediatric recipients with end-stage renal disease unique from their adult counterparts. In addition, the potential for complications after renal transplantation is far greater in children than in adults. In this study, we retrospectively analyzed 43 pediatric recipients who underwent 45 kidney transplantation at Gazi University Transplantation division years from 1996 to 2007. From 1996 to May 2007, 162 renal transplantations were performed at our institution. Forty-five pediatric kidney transplantation was performed in 43 pediatric patients out of 162. Twenty-two boys and 21 girls; age range, 7 to 17 years. Donors were from cadaver in 16 (35%) and living related in 29 (65%) patients. Long-term follow-up revealed the following morbidities in 3 (7.5%) recipients: lymphocele in 1 (2.5%) patients, graft renal artery thrombosis in 2 (2.5%). Two recipients were died with functioning graft, one because of fungal pneumonia and sepsis and other road way accident during 1-130 months follow-up. Four grafts (8 %) were failed (one for immunological reasons, two for BK virus infection and one for renal artery thrombosis). The overall 1, 5, 10 year graft and patients survival rates were 98%, 95%, 82% and 100%, 98%, 95% respectively for all recipients. For cadaveric transplantations, the overall 1, 5, 10 years graft and patients survival rates were 100%, 100%, 93% and 100%, 100%, 93% respectively. Better outcomes for renal transplantation in children may be obtained by strict adherence to precise surgical techniques, better immunosuppressive management, and early diagnosis and effective treatment of complications.
LONGTERM OUTCOME OF SPLIT LIVER TRANSPLANTATION IN ADULTHOOD

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The shortage of suitable donor organs, forced the transplantation community to develop alternative transplantation techniques to increase the donor pool. Especially for the pediatric population, split liver transplantation (SLT) has gained ethically acceptance as a procedure reducing pediatric waiting list mortality. Apart from the benefit in childhood transplantation SLT is still not fully accepted which may cause of the potential elevated risk of complications of the adult recipient receiving the right extended graft (Segment: I+V to VIII). Although there are many data of favourable short-term results from transplantation of the right extended split-grafts until now there exist no data concerning the long-term outcome of this procedure. Performing one of the largest split liver programs we therefore chose to compare the above mentioned procedure with whole organ liver transplantation procedure using matched pairs. Since January 1993 to December 2004 one-hundred-twenty-four primary transplantations of extended right split liver grafts (SLTs) to adult recipients were performed. These recipients were matched to recipients of whole liver transplantations (WLTs, n=373). Matching was performed blinded to the patients outcome and according to the following criteria: 1) indication for transplantation, 2) United Network for Organ Sharing (UNOS-) status I-IV, 3) recipient age (<55, >55 years), 4) donor age (<55, >55 years), 5) cold ischemic time (< 15 hours) 6) year of transplantation (1. period 1993-95; 2. period 1996-2000; 3. period: 2001-2004). Using these criteria a total of 70 matched pairs of SLT-WLT recipients were identified. The outcome of these recipients was retrospectively analyzed. The mean follow up time of these recipients was 26.5 month. The median age of the recipients was 48 (16-69) years, in both groups. Sixteen percent of the recipients in our study were highly urgent cases (UNOS status I), seventeen percent of them were urgent cases (UNOS status II), 67% of the recipients were transplanted electively (UNOS status III/ IV). The 2- and 5-year cumulative patient survival rates after SLT were 86.3% and 82.6%, after WLT it was 78.4% and 75.6%, respectively (log rank p= 0.2127). With regard to the 2- and 5-year cumulative graft survival rates we also did not observe significant differences between the groups (SLT: 77.3% both time points vs.71.9% and 65.8%; log rank p= 0.3822). The rates of primary non-function, poor function as well as the early and late biliary and vascular complications and the number of rejections was comparable for SLT and WLT. Conclusion: In this analysis the 2- and 5-year patient and graft survival rate after SLT were comparable with those after WLT. There were no major differences in the total number of biliary, vascular complications, especially with regard to the late complications. In conclusion, SLT of the extended right lobe, performed in an experienced transplant centre, does not put the adult recipient to an increased risk. Further SLT technique reduces death in the pediatric population awaiting liver transplantation. Therefore SLT is a safety and sufficient procedure to hamper persistent lack of suitable deceased donor organs.

SHOULD THE MIDDLE HEPATIC VEIN BE HARVESTED IN LIVE DONOR RIGHT HEPATECTOMY?

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Although right lobe (RL) grafts with middle hepatic vein (MHV) allows better venous drainage for the recipient in living donor liver transplantation (LDLT), MHV harvest is still controversial due to concerns about donor safety. This study compares both donor and recipient outcomes in 100 consecutive RL LDLTs. In a median follow-up of 22 months, none of the donors had either severe (grade 4) complications or mortality. Although, overall morbidity was higher in donors with MHV (n=49) compared to those without MHV (n=51) (7.8% vs. 22.4% respectively, p=0.05), the morbidity rates were similar between the groups when remnant liver volume (RLV) was >30% (7.3% vs. 16.7%, p=0.2). The highest complication rate (57%) was seen in donors who underwent MHV harvest when RLV was <30% (p=0.009; OR=9.9 (1.9-50.4), %95 CI). On the contrary, transaminase peak levels and bilirubin levels during the first postoperative week were significantly lower in recipients of grafts with MHV. Regarding equivalent graft volumes and ischemia times among the groups, this was interpreted as less hepatic injury in RL grafts with MHV. The results of this comparative study show that live donor right lobectomy with MHV harvest does not affect morbidity in appropriately selected donors, while recipients of RL grafts with MHV have less hepatocyte injury and better early liver function. We conclude that, MHV should not be harvested in donors with RLV of less than 30%.
O-29
PROSPECTIVE PRE-OPERATIVE EVALUATION OF HEPATIC VASCULAR ANATOMY IN LIVER TRANSPLANT DONORS, RECIPIENTS AND HEPATIC RESECTION CANDIDATES BY SIXTEEN-ROW MULTIDETECTOR COMPUTED TOMOGRAPHY ANGIOGRAPHY
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To assess the accuracy of sixteen-row multidetector computed tomography angiography (MDCTA) in preoperative evaluation of hepatic vascular anatomy, 52 liver donors, 12 liver recipients and 11 patients for hepatic resection underwent MDCTA with sixteen-row CT scanner during 11-month period. 0.625 mm. axial images were acquired in arterial, portal and hepatic venous phases with 50% overlap. Post-processing included multiplanar reconstructions, maximum-intensity projection and volume-rendering techniques. Findings were analyzed by two radiologists and compared with surgical findings in 23 patients. MDCTA examinations were technically satisfactory in all patients for arterial scan but for venous phases in only 47 (90.4%) donors, 5 (41.7%) recipients and 10 (90.9%) patients for hepatic resection. Arteries up to tertiary branches were identified in 73 (97.3%) patients. Segment IV artery was seen originating from right hepatic artery in 26 (34.7%) patients. 21 (28%) patients showed right hepatic artery arising from superior mesenteric artery while 13 (17.3%) had an accessory artery from superior mesenteric artery to segment IV. Thin accessory arteries measuring <3mm. in diameter were seen arising from aorta, celiac trunk / gastroepiploic artery in 8 (10.7%). 41 (66.1%) patients had accessory hepatic veins larger than 3mm. of which 7 (17.1%) drained into inferior vena cava. 35 (56.4%) patients showed common origin of the right/middle hepatic veins. Trifurcation of main portal vein was seen in 18 (29%) patients. There was one-to-one correlation between the MDCTA findings of the arterial anatomy and per-operative findings while small accessory hepatic veins draining segments VI and VIII were missed on MDCTA in 3 (0.05%) patients. In conclusion, Sixteen-row MDCTA provides precise information of hepatic vascular anatomy as well as vascular variations and is an indispensable tool for planning liver surgery.

O-30
LEFT LATERAL SEGMENT LIVER TRANSPLANT FROM A LIVING DONOR IN PEDIATRIC PATIENTS
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Living-donor liver transplant with a left lateral segment for small pediatric patients is a well-accepted procedure; however, the size of the graft may be too large, especially for children weighing less than 10 kg and aged younger than 1 year. In this study, we evaluate our experience with left lateral segment liver graft. Since September 2001, 111 liver transplants have been done in 108 children at our center. Living-donor liver transplant was done using the donor’s left lateral segment in 65 children. Children were divided into 2 groups: group 1 consisted of 33 children who had graft-to-recipient weight ratios less than 3%, and group 2 consisted of 32 children who had graft-to-recipient weight ratios of 3% or more. Results: The median weights of the children in groups 1 and 2 were 1.2 kg. The median graft-to-recipient weight ratios in groups 6.6 kg and 7.618.5 0.8. Postoperative complications, acute rejection 0.6 and 4.11 and 2 were 1.9 rates, and graft and patient survival rates were similar in both groups. Delayed abdominal closure was required in 1 child in each group. None of children required mechanical ventilation postoperatively. Daily Doppler ultrasonographic evaluations show no size-related graft perfusion problems. During a mean 20.4 months, 8 children died (5 in group 1 and 3 in group 2). Follow-up of 29.6 The remaining 57 children (90.4%) are alive at the time of this writing with good graft functioning. Left lateral segment living-donor liver transplant is feasible for small babies with liver failure who weigh less than 10 kg and are aged younger than 1 year. Grafts with graft-to-recipient weight ratios larger than 3% may be used safely in children. This is significant clinically because it decreases the unnecessary need to reduce graft size, which may be time consuming and can lead to complications.
THE EFFECTS OF DECEASED DONOR CHARACTERISTICS ON KIDNEY TRANSPLANTATION OUTCOME

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The rate of kidney transplantation in Iran is high but most transplants are still LURD. For expanding transplantation organ in Iran, Cadaveric organ procurement should be developed. For this policy some organ procurements unit (OPU) have been established in university hospitals. Researches in these activities are necessary for development of transplantation in Iran. Between Jun 2005 and Dec 2007, a total of 141 organs were harvested from 46 brain-dead effective donors in Organ Procurement Unit of Shariati Hospital. Eighty four of these organs were kidneys. In this retrospective study we analyzed the characteristics of brain-dead donors and recipients. The median age of all donors was 29 years (Min: 6, Max: 63). Two third of them were male. The average organ harvested was 3.06 per donor and 4 organs per month. The main causes of brain death were head trauma (n = 33, 72%). Organ yield is found depend on time of OPU activity significantly that it may be related to experiences of staff of it. Other variables were not change during this time. Donor characteristics such as age, sex, blood group and brain death impacted on organ yield. But these characteristics did not influence on cadaveric renal transplantation outcome except donor age (r: 0.306, P: 0.021). Also, final donor serum Na and K and urine volume effects on renal allograft outcomes. In conclusion, This study showed both experiences in OPU unit and donor characteristics effect on the number of organs which retrieved. Also some of these characteristic effect on transplantation outcome.

THE EUROPEAN TRAINING PROGRAM ON ORGAN DONATION: ETPOD

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European countries show a significant organ donation rate disparity caused by different economic, legal, cultural and social frameworks. One relevant factor that may influence the rates is the availability of proficient professionals. The European Commission granted a SANCO Project (2007-2009) to design and validate a Training Program on Organ Donation (http://etpod.il3.ub.edu). The project aims to contribute increasing organ donation awareness and activity rates by training health professionals involved in the field. Twenty partners from 17 countries participate distributed in 4 working groups (WG). WG1: creation of a data base to obtain information about the Target Areas (TAs) demography, donation activity and educational needs. WG2: design, implementation and evaluation of the “Training for Trainers” course and the “Essentials in Organ Donation” (EOD) seminars directed to health professionals and in-house staff members related with the potential donor detection. WG3: design and implementation of 5 Online modules with a practical seminar that compile the organ donation process for donor and/or transplant coordinators in charge of organ procurement. WG4: design, implementation and evaluation of the “Organ Donation Quality Managers” program to train donor program managers. Twenty five TAs has been defined so that a total of 3125 professionals will be trained. Up to now, WG1 have compiled all data. Its analysis provides information about the changes occurred in the TAs. For WG2, 50 senior coordinators have accomplished their training as multipliers of the EOD seminars and received homogenous educational material to reproduce the training in their TAs. For WG3, 50 junior coordinators are enrolled in the On-line courses. WG4 has gathered 25 managers for leadership and quality control strengthen. The project will evaluate the training impact in the TAs’ organ donation rates. Results will also consider the implementation of new actions and improvement of settled systems and transferability among organizations.
O-33 ALTRUISTIC NON-RELATED LIVING KIDNEY DONATION PROGRAM: FACTS & DIFFICULTIES

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Although the first kidney transplant that has been performed in Syria was back in 1978, but the kidney transplant program which was exclusively relied on blood related donors remained inactive, very irregular, and disorganized till only few years ago where the problem of organ shortage has inexorably grown up especially in a country like Syria where yet no deceased organ donation program is available, this made the situation more difficult and urged the health authorities in the year 2003 to provide an alternative and affordable source of organs that is from volunteer strangers or the so called Altruistic non-related living kidney donation program by enacting a new law that declared the act of kidney donation from living unrelated volunteers as generally acceptable providing the donation act to be free from coercion or any sort of money exchange between donors and recipients; And also, more importantly, this new law has recognized for the first time the concept of brain death and authorized the use of organs from deceased donors, therefore it constituted a landmark in the history of organ donation and transplantation in Syria. Since then, the practice of living unrelated kidney donation has particularly grown and flourished in some private kidney transplant centers; obviously, that was at the expense of decreasing living related kidney donation rate. Consequently, the kidney transplant rate has remarkably increased from 7 kidney transplants per million populations per year (pmp) in 2002 before the enactment of the new law to more than 17 kidney transplants pmp per year in 2007. Meanwhile, this tremendous growth of living unrelated kidney donation practice that has been mostly noticed and taken place in some private centers were unfortunately run by several “organ sale agents” involving different professionals including physicians, surgeons, nurses, brokers, etc. These illegal practices were of course targeting vulnerable individuals and inducing them to donate their kidneys. The involvement of unscrupulous agents in these transplant transactions has undoubtedly promoted organ commercialism rather than beneficent or altruistic aspects of organ donation. As underlined by the World Health Assembly resolution of 2004, there is need “to take measures to protect the poorest and vulnerable groups from transplant tourism and the sale of tissues and organs”. In consideration of the principles expressed in the above mentioned resolution and of the ethics of organ donation, and mindful of the possible consequences of the practices pertaining to organ trade and trafficking in our country, and following detailed discussion and exchange of thoughts and opinions, the government of Syria hereby released a pronouncement prohibiting all private centers in Syria to perform kidney transplantation and therefore, onward only the public hospitals will be authorized to perform kidney transplantation. In conclusion, live organ donation programs should not be developed in isolation without efforts to initiate deceased donor transplantation in order to lessen the burden of living donors and to enable a national self-sufficiency not only in kidney transplantation but also in heart, liver, lung, pancreas, and intestine transplantation as appropriate for the need of Syria.

O-34 EARLY CAN IN LIVING RELATED RENAL TRANSPLANT RECIPIENTS

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Early changes contributes to late graft loss in live related setting, but has not received enough attention. We have studied early morphological changes in dysfunctional grafts of live related recipients and have analyzed the associated risk factors. A retrospective study of live related renal transplant recipients, transplanted between January 2002 and December 2004 at Sindh Institute of Urology and Transplantation with a minimum follow-up of 1 year was performed. Patients with biopsy changes of chronic allograft nephropathy (CAN) within 18 months of transplantation (CAN group) were studied and compared with patients who had at least one biopsy, no CAN in any biopsy, and subsequent stable function in the same period (No CAN group). Forty two (25.6%) of 164 biopsied patients showed CAN within 18 months of transplantation (CAN group) were studied and compared with patients who had at least one biopsy, no CAN in any biopsy, and subsequent stable function in the same period (No CAN group). Forty two (25.6%) of 164 biopsied patients showed CAN within 18 months of transplantation (CAN group) were studied and compared with patients who had at least one biopsy, no CAN in any biopsy, and subsequent stable function in the same period (No CAN group). Acute rejection occurred with similar frequency (31% in CAN group vs. 20.5% in No CAN group, p = 0.10). Subjects developing CAN were more frequently males (90.5%) vs. (74.4%) compared to No CAN group (p=0.02). CAN group had higher creatinine at first discharge compared to No CAN group 1.5 ± 0.71 mg/dl vs 1.31 ± 0.31 mg/dl respectively (p=0.02). CAN patients continued to show higher creatinine 1.6 ± 0.5 mg/dl compared to No CAN group 1.4 ± 0.4 mg/dl at three months (p = 0.01) and subsequently. CMV infection and Polyoma were more frequently (13.2% and 14.3% respectively) in the CAN group compared with patients who had at least one biopsy. CMV infection and Polyoma were more frequently (13.2% and 14.3% respectively) in the CAN group compared with patients who had at least one biopsy. However, there was no difference in HLA matching, early graft function, and immunosuppressive regime between the two groups. Acute rejection occurred with similar frequency (31% in CAN group vs. 20.5% in No CAN group, p = 0.10). Subjects developing CAN were more frequently males (90.5%) vs. (74.4%) compared to No CAN group (p=0.02). CAN group had higher creatinine at first discharge compared to No CAN group 1.5 ± 0.71 mg/dl vs 1.31 ± 0.31 mg/dl respectively (p=0.02). CAN patients continued to show higher creatinine 1.6 ± 0.5 mg/dl compared to No CAN group 1.4 ± 0.4 mg/dl at three months (p = 0.01) and subsequently. CMV infection and Polyoma were more frequently (13.2% and 14.3% respectively) in the CAN group compared to No CAN group (0.8% and 0.8% respectively) (p = 0.001 & p = 0.0001 respectively). Serum creatinine from early post-transplant period is a good predictor of subsequent CAN in living related transplant and non-immunological factors probably play an important role.
PREEMPTIVE LIVING KIDNEY TRANSPLANT: A SINGLE-CENTER EXPERIENCE

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Renal transplant is acknowledged as preemptive if it occurs before the initiation of dialysis. In our experiences and in the literature, preemptive transplant has been shown not only to reduce the costs of renal replacement therapy but also to avoid long-term adverse effects of dialysis. Preemptive transplant therefore is associated with better survival of both the allograft and the recipient. Our aim in this study was to evaluate the outcomes of preemptive renal transplant experience at our center. Since 1985, 1385 renal transplants have been done at our center. The transplants of 16 of these 1385 patients (11 male, 5 female; mean age, 28.5±15 years) were preemptive in nature, and these patients were analyzed retrospectively. The causes of end-stage renal failure were focal segmental glomerulosclerosis in 5, vesicoureteral reflux in 4, Berger’s disease in 2, polycystic renal disease in 2 and other in 3 patients. Ten patients were adult, the remaining 6 were children. The mean plasma creatinine clearance and creatinine level of the preemptive recipients before transplant were 13.5±8.5 mL/min and 6.7±2.4 mg/dL, respectively. All renal transplants were done from a living-related donor. The mean preoperative serum creatinine levels, mean glomerular filtration rate, and creatinine clearance rates of the donors were 0.8±0.1 mg/dL, 61.6±6.5 mL/min, and 112.5 12 mL/min, respectively. Three acute rejection episodes (18.7%) occurred during a mean follow-up of 48.7±14 months (range, 25-76 months). Two patients required retransplantation owing to acute humoral rejection and chronic rejection 2 and 48 months after the initial renal transplant. At the time of this writing, all patients are alive with good renal function. In conclusion, our single center results are promising for preemptive transplant as the optimal, least-expensive mode of treatment for end-stage renal disease.

URINE PROINFLAMMATORY RESPONSE IN KIDNEY TRANSPLANT RECIPIENTS WITH POLYOMAVIRUS BK VIRURIA

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Polyomavirus BK has emerged as an important complication after kidney transplantation. Although, BK nephropathy develops in only 1% to 10% of renal transplant recipients, its prognosis when present is very poor. The relationship of urine cytokines with Polyomavirus BK viruria after kidney transplantation has not yet been studied and literature reports on cytokine and posttransplant BK viruria are rare. In a prospective study, we compared posttransplant urine cytokine levels of 40 outpatient renal transplant recipients without BK (n = 20), with low-level (2.6-5.0 log10) (n = 12) and high-level (5.1-9.8 log10) (n = 8) viruria and 20 healthy controls (HCs). S (soluble) IL-1RA (interleukin-1 receptor antagonist), IL-2, sIL-2R, IL-3, IL-4, IL-6, sIL-6R, IL-8, IL-10, IL-17, TGF (tumor necrosis), and INF- (interferon-) TGF-ß2 (transforming growth factor-ß2), levels were determined using commercially available ELISA kits. Urine proinflammatory cytokines IL-6 (p = 0.015) and sIL-6R (p = <0.001) were significantly higher in BK+ than in BK- patients. Interestingly urine sIL-6R (p = <0.001) was lower in BK- patients than in HCs, whereas BK+ patients had significantly higher urine IL-6 (p = <0.001) than HCs. Urine levels of all cytokines were similar in patients with high and low level BK viruria (p = n.s.), whereas patients with high and low level viruria had higher urine sIL-6R (p = 0.003 and p = 0.004 respectively) than patients without viruria. In conclusion, Renal transplant recipients with BK viruria have a strong inflammatory cytokine response with activation of IL-6 and sIL-6R, which might be involve in pathogenesis of Polyoma BK virus-associated nephropathy. Our data suggest that the inflammatory response is heightened in kidney during BK virus replication independent to virus load.
There is no active treatment for post-renal transplantation BK virus nephropathy (BKVN) proved to be effective so far. Leflunomide, intravenous immunoglobulin (IVIG) and ciprofloxacin are still under investigation as active measures for BKVN treatment. To assess the efficacy of active management for BKVN on graft outcome after one year, Renal transplant recipients (RTR) with positive BKV-PCR in urine and blood twice underwent graft biopsy to confirm BKVN. Once BKVN is diagnosed, anti-metabolites (mycophenolate mofetil or azathioprine) were changed to leflunomide, a course of IVIG and oral ciprofloxacin were given. Serial monitoring of BKV-PCR in urine and blood were carried out. Repeat graft biopsy was done when indicated. Eighteen RTR were reviewed, 72% were males, one RTR received the second renal transplant, deceased donors were 50%, mean HLA mismatches was 3.6, all RTR received induction therapy (61% thymoglobulin and 39% basiliximab) and 60% received antirejection treatment. Maintenance immunosuppression was prednisolone (93%), MMF (93%), Tacrolimus (61%), CsA(33.5%) and sirolimus (5.5%). Baseline mean s.creatinine was 191.6 which increased to 339 umol/l at one year (p 0.026). According to baseline renal function, patients were divided into two groups; 7 RTR in group 1 and 11 RTR in group 2 (mean s.creatinine 150 vs. 218 umol/l). At one year, mean s.creatinine increased to 159 umol/l (p 0.818) for group1 and 454umol/l (p <0.0001) for group2. Three grafts were lost by the end of the study (16.6%), all were in group 2 (p 0.005). In conclusion, Lack of regular screening, late diagnosis and heavy immunosuppression are predisposing factors for development of BKVN. Active treatment for BKVN by leflunomide, IVIG and ciprofloxacin may improve graft outcome at one year if given early before significant deterioration of graft function occurs.

Serum creatinine is an unreliable method of assessing renal function of renal allografts. There are very few and conflicting reports on the reliability of use of various GFR formulae in renal transplant recipients. To assess the performance and accuracy of various GFR formulae in estimating the renal function of renal allograft patients, GFR was measured using an isotope method in 95 stable post renal transplant patients (6 months to 10 years, mean 5.2 years). GFR was estimated in these patients (using calibrated serum creatinine) by the following formulae: MDRD (for whites and blacks), Cockcroft-Gault, Nankivell. In addition GFR was calculated using cystatin C. Comparisons between means of each method to the gold standard were studied by using paired t-test. bias and precision were calculated. The overall agreement was evaluated by median absolute difference, median percent absolute difference and percent of calculated GFR values falling within 20% of measured GFR. GFR Bias (p value) Precision (p value) GFR by isotope 57.4 (27.4) Nankivell 64.5(15.9) +7.1 (0.03) 0.34 (0.01) Cockcroft-Gault 69.5 (23.7) +12.1 (0.007) 0.1 (0.44) Cystatin C 56.0 (23,2) -1.4 (0.634) 0.64 (0.0001) MDRD (whites) 58.9 (27.4) Nankivell 64.5(15.9) +7.1 (0.03) 0.34 (0.01) Cockcroft-Gault 69.5 (23.7) +12.1 (0.007) 0.1 (0.44) Cystatin C 56.0 (23,2) -1.4 (0.634) 0.64 (0.0001) MDRD (white) 58.9 (15.0) +1.5 (0.45 0.6 (0.0001) MDRD (black) 71.5 (18.1) +14.1 (0.001) 0.6 (0.0001). The best correlation and least bias (2.4% and 2.6% respectively) was seen when using cystatin C and MDRD (white) formulae. The least correlation and largest bias was seen when using MDRD (black) and Cockcroft-Gault formulae both of which overestimated the GFR by 24.6% and 12.4% respectively.
**O-39**

DOES REPEATED RAMADAN FASTING ADVERSELY AFFECT KIDNEY FUNCTION IN RENAL TRANSPLANT PATIENTS?


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This is a prospective cohort study in post-renal transplant who fasted 3 consecutive Ramadans. The baseline eGFR, mean arterial pressure (MAP) and urinary protein excretion before the first Ramadan were compared to those after the 3rd Ramadan in 35 the fasters and 33 non-fasters. The effect of age, duration post-transplant, presence of diabetes mellitus (DM) and proteinuria on changes of the GFR were studied. The two groups were comparable in gender, age, transplant type, duration post-transplant, presence of DM, hypertension, proteinuria, serum creatinine and MAP. Among the fasters, there was no change in eGFR following 3 Ramadan’s fasting (56.4 ml/min ml versus 55.4 ml/min, respectively, p= 0.8) even after adjusting for age, DM, baseline GFR, proteinuria or duration post-transplant. Comparing between fasters and non-fasters in the changes in GFR, MAP and urinary proteinuria excretion between baseline and the 3rd Ramadan, we found the differences not to be significant.

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**O-40**

PREOPERATIVE EVALUATION OF LIVING DONORS USING COMPUTED TOMOGRAPHY ANGIOGRAPHY (CTA) AND CONVENTIONAL ANGIOGRAPHY: COMPARISON WITH INTRAOPERATIVE FINDINGS


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CTA is a minimally invasive modality to image the vasculature without the morbidity of direct large vessel vasculature access and its major indications in urology are assessment of the renal vasculature in preparation for donor nephrectomy, identification of extravessel in evaluation of ureteropelvic junction obstruction and for diagnosis of renal artery stenosis. To assess the accuracy of CTA for the evaluation of renal vascular anatomy for preoperative donor assessment in living kidney transplantation. CTA of 70 living donor kidney donors were analyzed by two blinded observers and compared with intraoperative findings. Similar findings of conventional angiography of 30 living donor kidney donors compared with intraoperative observations. In CTA group there were two patients each with two main renal veins on surgery that hadn’t been seen on CTA. In the second group there was one patient with unrevealed two main renal veins before surgery. In both groups, all patients were diagnosed accessory renal arteries if existed. Overall, the accuracy for renal main artery anatomy was 100% for both CTA and conventional angiography. Accuracy for renal main vein anatomy was 97.1% and 96.6% for CTA and conventional angiography respectively. Hence, these two modalities had comparable results for renal main vasculature anatomy detection.
HELICOBACTER PYLORI AND HYPERGASTRINEMIA IN PEDIATRIC RENAL TRANSPLANTATION CANDIDATE

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To determine whether Hp is an agent responsible for Gastrointestinal problems in uremic children, and to assess fasting gastrin concentrations in children with and without renal failure in the Hp-positive and -negative groups. This case control study was conducted in 24 children on chronic hemodialysis; female/male 13/11, mean age 14.7±3.4 years, and 25 healthy age- and sex-matched children recruited at the Gastroenterology outpatient clinic as a control group, over a 12-month period. Hp infection was evaluated by using direct antral histological examination and rapid urease test. Fasting serum gastrin levels were measured in both groups. H. pylori was detected in sixteen uremic patients (66%) and in 5 children (20%) in control group (p<0.001). High serum gastrin levels in infected and non-infected uremic children were detected in 75% and 12.5%, separately (p<0.001). The same differences was seen in control group (80% vs. 15%, p<0.001). Mean fasting serum gastrin levels in infected and non-infected uremic children were equal to 208 and 97.2 ng/lit, respectively (p<0.001). There were no statistical differences between uremic and control groups regarding percentage of high serum gastrin levels in infected and non-infected cases. But, the mean fasting gastrin levels in 5 Hp-positive non-uremic children (126.6 ng/l) were significantly different from those in 16 Hp-positive uremic children (208 ng/l) (p<0.05). This difference was not seen in non-infected cases between uremic and healthy groups, (97.2 vs. 78.7ng/l, p>0.05). In conclusion, We found Hp infection and secondary hypergastrinemia is more frequent in uremic children than normal population. Meanwhile, Hp infection in uremic children is accompanied with higher level of serum gastrin. Our results emphasize the importance of periodic, and also pre-transplant gastrointestinal evaluation in these patients to find out their problem and manage appropriately.

COMPARING BARRY AND BARRY – TAGUCHI URETEROVESICAL REIMPLANTATION TECHNIQUES FOR KIDNEY TRANSPLANTATIONS

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Renal transplantation is the choice of treatment for chronic renal failure. Applying suitable ureterovesical anastomosis technique can prevent most of risks for kidney graft. Extravesical ureteroneocystostomy is becoming popular in renal transplantation because of the low complication rate and technical ease. This decrease in complication was due to limited bladder dissection and the need for a shorter ureteral segment from the donor. We evaluated and compared the incidence of urologic complications by using Barry and Barry-Taguchi ureteroneocystostomy in 198 cases of renal transplantation. We recorded all urological complications after performing extravesical randomly Barry-Taguchi (new technique) and Barry ureteroneocystostomy in the recipient kidney that developed from Sep. 2004 to Mar. 2007 (mean follow up 12 mouths). The urological complications included complicated hematuria, urinary fistula, ureteral stenosis, and VUR. The incidence of urological complications in Barry-Taguchi and Barry reimplantation technique were 4(4.0%), 5(5.1%) respectively. These complications included one urinary leakage and three ureteral obstruction from Barry-Taguchi group, and 4 obstruction and one leak from Barry group which these patients required reoperation. No occurred complicated hematuria and symptomatic VUR in our trial in both groups. Ranges of ureteral anastomosis time were recorded 4 - 16 minute (mean 8.26) in Barry-Taguchi and 5-20 (mean 9.9) in Barry. Mild to moderate reflux was noted in 2(4%) patients in random VCUG of 50 transplant patients in Barry-Taguchi group. These weren’t required treatment with endoscope or reoperation. In conclusion, Barry –Taguchi extravesical ureteroneocystostomy (new technique) proved to be a more rapid and simple method without increasing the incidence of urological complication. This technique with acceptable urologic complications is one of choice technique in our centre.
**O-43**

**FACTORS INFLUENCING COMORBIDITY SCORE IN YOUNG RENAL TRANSPLANT RECIPIENTS**

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Despite the improvement in patient and allograft survival rates in renal transplant population, multiple comorbidities that develop during the follow-up period is still an important problem. Charlson Comorbidity Index (CCI) is a valid index of determination of comorbidities in many disease conditions. There is little data about the clinical associates of CCI in young transplant patients. We tried to investigate the factors affecting comorbidities in a population of young and diabetes free renal transplant recipients. 107 young and diabetes free renal transplant recipients (71 male, 32 female; mean age 34.4 ± 7.7) with functioning allograft more than one year were included in our study. Demographic and biochemical parameters, fetuin, osteopontin and 25-hydroxyvitamin D levels, presence of insulin resistance with homeostasis model assessment (HOMA-IR), determination of nutritional status with subjective global assessment (SGA) and CCI of these patients were recorded. According to CCI there were 36 (47%) patients with at least one comorbidity (16 (21.1%) patients with one, 13 (17.1%) with two, 3 (3.9%) patients with three and 3 (3.9%) patients with four comorbidities). Among clinical and laboratory parameters, prior hemodialysis duration, SGA score, uric acid and osteopontin levels and biopsy proven chronic allograft nephropathy was found to be positively correlated whereas albumin and mean arterial pressure was negatively correlated with comorbidities. In multivariant analysis only uric acid (OR= 1.48, p=0.046) and dialysis duration (OR= 1.02, p=0.009) correlated with comorbidities. Meanwhile uric acid levels have been found to be a surrogate marker of metabolic syndrome (positive correlation with age, waist circumference and BMI and negative correlation with HDL) and were influenced with graft function in our patients. In conclusion, Duration of prior dialysis and high uric acid levels were among the strongest factors related with comorbidities in young renal transplant patients. Early planning of transplantation and good metabolic control will help to reduce comorbidity in young transplant patients.

**O-44**

**CONTROL OF BLEEDING DURING HAND-ASSISTED LAPAROSCOPIC DONOR NEPHRECTOMY**

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Laparoscopic donor nephrectomy has gained wide acceptance among transplant surgeons as it proved to be safe and provides similar graft function to open nephrectomy. Minimally invasive donor nephrectomy can be performed either totally laparoscopic or Hand-assisted. Hand-assisted donor nephrectomy is thought to be safer with regards to immediate control of intra-operative bleeding. In this video we show clips of emergency intra-operative arterial and venous bleeding during nephrectomy that were controlled by the hand. DVD recordings of all donor nephrectomy patients that had intra-operative bleeding were reviewed and representative clips were collected in one DVD for presentation. This video demonstrates emergency intra-operative arterial and venous bleeding during nephrectomy, and maneuvers used for the control of bleeding by the surgeon’s hand. No patient required blood transfusion and blood loss was minimal as control was immediate. Most bleeding was controlled by compression only (either by the hand or by inserting gauze) and dissection was carried out uneventfully thereafter. Only one patient required conversion to open, but with the surgeon’s finger controlling bleeding from the renal artery stump as the team was preparing for the conversion. In conclusion, Hand-assisted donor nephrectomy approach provides immediate control of bleeding which gives the surgeon ample time to reassess the situation and manage accordingly. Therefore blood loss, the need for blood transfusion, and the need to convert to open nephrectomy is minimized.
Living donor liver transplantation (LDLT) has been refined and accepted as a valuable treatment for patients with end-stage liver disease in order to overcome the shortage of organs and mortality on the waiting list. The aim of this study was to report our experience in LDLT. We retrospectively studied 50 living donor liver transplantations from January 1997 to March 2008 in organ transplant center of Namazi Hospital, Shiraz, Iran. We reviewed demographic data, family history, operation duration, hospital stay duration and post-operation complications in donors and recipients. A retrospective analysis of chemical and biochemical data of recipients was also performed. A total of 50 patients (30 male, 20 female, 7.21 ± 5.35 y/o) underwent LDLT (10 right lobe, 38 left lobe and 2 left lateral segment). 47 received liver graft from parents, 2 from their brothers and one from uncle. The most common indications for LDLT were end-stage liver disease due to Wilson disease (16%), cryptogenic cirrhosis (16%), biliary atresia (12%) and autoimmune hepatitis (12%). The mean follow-up was 16.91 ± 23.74 months. There were 13 (26%) recipients mortality (5 due to vascular complications, 3 due to sepsis after bowel perforation, 2 from liver dysfunction, 2 from chronic rejection due to non-compliance, and 1 from diffuse aspergillosis) and morbidity rate was 50% (including 19 re-exploration during hospital course and 5 biliary complications). In conclusion, The study demonstrates that LDLT can play an important role in decreasing the number of patients in waiting list for liver transplantation especially in pediatric group. However, because of relatively high mortality and morbidity, we must use every effort to maximize our treatment outcome.

Living donor liver transplantation (LDLT) emerged as a major treatment option for patients with hepatocellular carcinoma (HCC) where cadaveric organ availability is limited. Optimum patient selection is very important in offering LDLT to patients with HCC. We aimed to evaluate the results of the patients undergoing LDLT for HCC classified within and beyond Milan criteria (MC). Between July 2004-July 2008 145 consecutive LDLT were performed in our center. Excluding three perioperative deaths and a case with non-cirrhotic fibrolamellar HCC, 37 patients (30 men, 17 women) were included in the analysis. Mean age was 54.6 years (range, 40-72 years). Preoperatively, all recipients underwent evaluation with CT/MRI. LDLT was considered for patients with negative metastatic work-up. The number and size of the lesions did not constitute an exclusion criteria per se. After pathological examination 18 patients were found to be within and 19 patients beyond MC. Mean follow-up was 24 months (range, 6-49 months). Preoperative mean alfa-fetoprotein level was significantly higher in patients with HCC beyond MC (60 vs. 321 ng/dL). Tumor differentiation was similar in both groups. HCC recurred in 8 patients (17.9%); 2 (11.1%) within and 6 (31.1%) beyond MC. There were 4 mortalities (2 HCC recurrences, 1 recurrent hepatitis C, and 1 caval thrombosis) which were all among the patients with HCC beyond MC. Estimated disease free survival in Kaplan-Meier analysis was significantly lower in patients with HCC beyond MC (32.8 vs. 41.2 months). In conclusion, LDLT offers early transplantation opportunity with excellent results in patients with HCC within MC. However, extension of MC in the setting of LDLT results in more patients with HCC being treated at the expense of a higher incidence of recurrence.
O-47
MULTIPLE BILE DUCT ANASTOMOSES WITHOUT A STENT IN LIVING-DONOR LIVER TRANSPLANTS

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It is unclear whether presence of multiple bile ducts in the graft increases the risk of biliary complications after living-donor liver transplant (LDLT). Since September 2001, 238 liver transplants have been done in 234 recipients at our center. After December 2006, we did not use a drainage catheter (e.g., T tube) for bile duct reconstruction; since that time, 79 LDLTs have been performed at our center. Twenty-seven of these 79 recipient’s (19 male, 8 female; 19 adults; 8 children; mean age, 22 years) graft had multiple bile ducts, which were analyzed retrospectively. Biliary reconstruction was done with a duct-to-duct anastomosis in 21 recipients and with a Roux-en-Y hepaticojejunostomy in 6. Twenty-two of the 27 grafts had 2 bile ducts, 4 had 3 bile ducts, and 1 had 4 bile ducts. In 4 grafts with 2 bile ducts, we made separate anastomoses. In the remaining 18 grafts with 2 bile ducts, we created a single orifice at the back table. In 2 grafts with 3 bile ducts, the 2 neighboring ducts were sutured together; the other bile duct was anastomosed separately. In the remaining 2 grafts with 3 bile ducts, the 3 bile ducts were sutured together. In the last graft with 4 bile ducts, 2 neighboring ducts were sutured together; the remaining 2 bile ducts were anastomosed separately. Three biliary leaks and 1 biliary stenosis occurred in this series; these were successfully treated with interventional 6.3 months and at the time of this radiology. At a mean follow-up of 9.6 writing, 3 recipients had died, and the remaining 24 (89%) recipients were alive with normal liver functioning. In conclusion, Although the follow-up in our series was short, it appears that the presence of more than 1 bile duct in a graft did not increase biliary complications after liver transplant.

O-48
BONE MARROW TRANSPLANTATION IN SHIRAZ, IRAN

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From May 1993 through August 2008 allogeneic bone marrow transplant (BMT) or peripheral stem cell transplant (PSCT) and autologous PSCT was performed on 400 patients (allogeneic= 293, autologous= 107); 153 patient with transfusion-dependent thalassemia major, 132 patients with leukemia (AML=75, ALL=34, CML=23), 70 lymphoma patients (Hodgkin’s=20 and non- Hodgkin’s=50), 22 multiple myeloma cases, 15 severe aplastic anemia cases, and 6 other diseases, in Nemazee hospital, Shiraz- Iran. The age range for thalassemic patients was 2-22 years (Median 11 years). 22 patients were in class I, 70 in class II and 60 in class III Lucarelli risk group. The conditioning regimen consisted of busulfan (BU) 14-16 hoursmg/kg orally and cyclophosphamide (CY) 120-200 mg/kg IV, and antithymocyte globulin (ATG), IV 40-100 mg/kg. The Prophylaxis against graft vs. host disease (GVHD) was with cyclosporine plus methylprednisolone. BMT was performed on 124 of the patients and PSCT on 28 of them. The donors were human leukocyte antigen (HLA) - identical siblings (n=121) or parents (n=20) and one HLA antigen-mismatched siblings (n=11). The second bone marrow infusion was done in 8 patients, including 3 who are still living with mixed chimerism. The second BMT was performed successfully on 4/5 patients with rejection; with Bu 16 mg/kg, Cy 200 mg/kg and ATG 100 mg/kg. The age range for non –thalassemia patients were from 1-60 years (median 25 yrs). In thalassemic patients the incidence of grade IV acute GVHD was 26.5% in BMT group and it was 74.7% in PSCT group. The incidence of extensive chronic GVHD was 18% in BMT group and was 47% in PSCT group. The survival and disease-free survival for BMT group is 85% and 75% and for PSCT group is 79% and 79% respectively. In non- thalassemic patients very sever hemorrhagic cystitis was developed in six patients with leukemia and was the cause of death in two. The internal iliac artery ligation was done in two and was life saving in one of them. The diseases- free survival for leukemia patients is 65%, for aplastic anemia is 85%, and for lymphoma cases is 50%. The survival for multiple myeloma cases is 90%. In conclusion, allogeneic BMT or PSCT is curative therapy for the patients with beta-thalassemia major, and it is advised for lethal diseases such as leukemia, severe aplastic anemia, and relapsed lymphoma cases.

Key words: Bone marrow transplant (BMT), peripheral stem cell transplant (PSCT), beta thalassemia major, leukemia, lymphoma, aplastic anemia.
**O-49**

AUTOLOGOUS BONE MARROW STEM CELLS IN THE TREATMENT OF CIRRHOTIC PATIENTS


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Liver cirrhosis (LC) is the end stage of chronic liver diseases. Liver transplantation is one of the only effective therapies available to such patients. However, lack of donors, surgical complications, rejection, and high costs are its serious problems. The potential for stem cells in bone marrow (BM) to differentiate into hepatocytes was recently confirmed. In this study, we evaluated safety and feasibility of autologous bone marrow mononuclear (BM-MNC) and enriched CD133+ hematopoietic stem cell transplantation through the portal vein in patients with decompensate cirrhosis. Seven patients with decompensated cirrhosis were included in two groups (CD133 or BM-MNC). Approximately 200 ml of the bone marrow of the patients was aspirated, and CD133+ or BM-MNC cells were selected and the cells were slowly infused through the portal vein under sonography monitoring. All patients tolerated the procedure well, and there were no treatment-related side effects or toxicities observed. Totally, all patients showed marginal improvements in serum albumin level and MELD score, but not in each group. Other markers did not improve significantly. However, we could not find any difference between CD133 and BM-MNC groups. This early experience with portal vein application of CD133+ or BM-MNC could suggest this novel therapeutic approach for cirrhotic patients.

**O-50**

EFFECT OF DONOR BONE MARROW CELLS INFUSION ON ALLOIMMUNIZATION IN KIDNEY ALLOGRAFT PATIENTS


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The aim of this study was to investigate the role of donor bone marrow cells infusion in post transplantation anti-HLA antibody induction and outcome of kidney allograft patients. Between June 2006 and May 2007, a total of 40 living donor kidney transplants; 20 recipients with Donor Bone Marrow Cells (DBMC) infusion (2.1×10^9±1.3×10^9 MNCs/body including 3.5×10^7±1.6×10^7 CD34+ progenitor cells) and 20 without infusion as control, were entered into study and followed prospectively for one year. Both groups received the same baseline immunosuppressant consisting triple drug regimen. WBC cross match, Panel Reactive Antibody (PRA) and HLA-DNA typing were performed for all patients. Pre and post transplant (days 14, 30, and 90) sera samples were screened for the presence of anti-HLA antibodies, and subsequently antibody identification was determined for positive patients by ELISA method. Incidence of acute rejection (AR) was 30% (6/20) in controls versus 15% (3/20) in DBMI patients. Almost all patients with AR had a pre-transplant anti-HLA antibody in both groups. 35% in DBMI and 30% in controls had pre-transplant antibodies but without acute rejection. In controls, 2 patients with AR and 2 without AR were positive for both Donor Specific Antibody (DSA) and non DSA. All 3 patients with AR in DBMI showed non DSA post operatively, but with a lower strength to HLA antigens. Mean percentages of post transplant PRA was 16.5% vs. 38.5% in controls. The lower titer of antibodies and lower average serum creatinine (2.25±0.07 vs. 2.85±1.2, P=0.0001) were found for patients with AR in DBMI compared to controls. In conclusion, Infusion of DBM mononuclear cells were perfectly tolerated, but the descending rate of creatinine level was slower than control group. The absence of GVHD and lower percentages of PRA in DBMI group are possible manifestations of functional immune modulation achieved by the DBMC infusion protocol.
Tissue Banking in Iran: 14 Years Experience of Iranian Tissue Bank

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Iran is located in Middle East with 98% of its 68 million population being Muslims. Tissue transplantation has a long history in Iran. Avicenna, the great Iranian physician, performed the first nerve repair in 11th century. Cornea was the first tissue transplantation in 1935. The Central Eye Bank of Iran was established in 1991 and Iranian Tissue Bank (I.T.B) was set up in Imam Khomeini Hospital (Tehran –Iran) in 1994. In the first 2 years of activity fresh homograft heart valves were prepared for clinical use, then cryopreservation techniques was implemented to enhance efficacy and facilitate long term storage of prepared homografts. The current products of I.T.B are homograft heart valves, amniotic membrane, cartilage, bone segments and soft tissues. In the beginning of I.T.B’s activity, lack of legislation was the main obstacle against tissue donation. Fortunately, in response to our istifta (religious question) most of prominent scholars have pointed out positive opinion (Fatwa) regarding organ and tissue donation. These religious rulings helped us to start tissue donation before legislation. The act of “Deceased or Brain dead patient organ transplantation” was passed on April 6, 2000 by the parliament. Despite there is not a separate legislation for tissue donation and transplantation but the legal frame work is the same as organ transplantation. According to the law, informed consent is obtained from the next of kin. Despite the importance of religion and legislation, it seems that the main barriers against organ and tissue donation are socio-cultural factors, family relations, lack of knowledge and filial obligations. So I.T.B has conducted many educational programs and propaganda with support of mass media. The result was a considerable growth in number of tissue donors. From 1994 to the end of 2007 the number of tissue donors was more than 3300 that 84% of cases were after legislation.

Does Graft Type Have an Impact on Postoperative Liver Function Recovery of the Living Liver Donors?

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Donor safety should be the primary focus in living donor liver transplantation. Although, the procedure carries a significant risk of morbidity and even mortality, the use of marginal liver donors have become a current discussion issue. Between September 2001 and August 2008, we performed 190 LDLT at our center. Of 190 donors, 109 were male and 81 were female, with a mean donor age of 34.5±9 (range 19-66). One-hundred-forty-one of the donors were first degree relatives of the recipients, 33 were second degree relatives and 16 were spouses. We performed 90 right lobe, 36 left lobe and 64 left lateral segmentectomies (LLS). For the right lobe grafts, median hepatic vein was always left in the remnant liver. The mean ratios of remnant liver to the total liver volume of the donor were 42, 66.8 and 74.6% for the right, left lobe and LLS donors, respectively. The mean hospitalization periods were 7, 6.2 and 9.7 days with the same order, and the mean operation times were 330, 324 and 324 minutes. Only 15 donors (7.8%) received autologous blood transfusions during the surgery. Liver function tests including ALT, AST, bilirubine, PTT, thrombocyte levels were assessed at 1st, 3rd and 5th postoperative days, then at the time of outpatient follow-up, usually at the 3rd week. There was no postoperative mortality and 13 complications occurred in 10 of the 190 donors (5.2%) in which most of them were treated with radiologic interventions. In conclusion, although we did not accept grafts with remnant volumes less than 40%, graft type had a negative influence on postoperative liver function tests. Larger graft causes impaired functions in the early postoperative period, however does not have a negative impact on the long term. The remnant volume should be measured fastidiously and surgeons should avoid taking large volumes especially for the right lobe donors.
O-53
PEDIATRIC LIVER TRANSPLANTATION IN IRAN: A 9 YEARS EXPERIENCE

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Liver transplantation (LT) is accepted as the standard therapy for end-stage liver disease. The current shortage of organ donors has led to use split grafts and living-related donors to provide timely liver transplants to these children. We report our experiences with pediatric LT during a 9 years period. From April 1999 to August 2008, 138 infants and children who underwent LT were studied retrospectively for pretransplantation status, medical and surgical complications and survival rate. There were 83 (60.1%) boys and 55 (39.9%) girls. The mean age of patients was 9.1±5.6 yr (range: 0.5-18) with a mean weight of 28.1±17.0 kg (range: 7-80). The main indications were Wilson disease (20.3%), cryptogenic cirrhosis (16.7%), and autoimmune cirrhosis (14.5%), followed by biliary atresia (13.8%), tyrosinemia (9.4%), and progressive familial intrahepatic cholestasis (8.7%). We used living-related donor in 54 (39.1%) and split liver in 20 (14.5%) cases and 64 (46.4%) patients received whole liver from deceased donors. The mean follow-up of patients was 25.3 ± 20.3 months (range: 1-100). The mortality rate was 27.5% (26.1% in-hospital mortality). The main causes of mortality were vascular complications (32.6%), primary nonfunction (19.6%), sepsis (17.4%), chronic rejection (17.4%), and biliary complications (6.5%). Mortality rate in patients under 10 kg (58.8%) was very higher than patients over 10 kg (23.1%). Among those patients who discharged from hospital (73.9%) the most common cause of mortality was chronic rejection from non-compliance (4 cases), chronic rejection (3 cases) and post transplant lymphoproliferative disease (2 cases). In conclusion, Our results demonstrate that pediatric LT is a feasible undertaking in Iran. Organ shortage in our area led to liberal use of living related and split liver techniques. The overall results of the pediatric LT in Iran are acceptable but we should use every effort to improve this.

O-54
THE ROLE OF VALACYCLOVIR ON EPSTEIN-BARR VIRUS VIRAL LOADS IN PEDIATRIC LIVER TRANSPLANTATION PATIENTS

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Many children undergoing primary/reactivated Epstein–Barr virus (EBV) infection or PTLD following liver transplantation (LT) maintain chronically elevated EBV viral loads without displaying any symptoms. Valacyclovir has invitro activity against EBV. We aimed to review our experience with valacyclovir on peripheral blood EBV viral loads in a group of EBV infected patients after LT. 12 children aged 6-36 months, median 12 months; liver transplanted with the diagnoses of biliary atresia (6), PFIC type 2 (2), hepatoblastoma (1), Crigler Najjar syndrome (1), Alagille syndrome (1), and idiopathic neonatal cholestasis (1). Eight of them (%66) EBV IgG seronegative at the time of LT and developed primary infection. Valacyclovir was given to 2 patients who had primary EBV infection and PTLD prior to development of EBV carrier state. Two other patients had EBV reactivation and had chronic carrier state for 8 and 10 months before valacyclovir treatment. Three patients had primary EBV infection and became chronically EBV PCR positive for more than 1 year before valacyclovir. For 2 EBV reactivated patients valacyclovir was given when EBV PCR positivity was detected for the first time. Valacyclovir was prescribed immediately to 3 patients when asymptomatic primary EBV infection was detected. Peripheral blood EBV viral loads were tested for every 2 months. The proportion of subjects with EBV viremia who had >or=2log10 decrease in EBV copies/mL was the primary outcome. The duration of valacyclovir treatment was median 10 months (8-11 months). At the beginning of valacyclovir treatment median level of EBV viral loads was 1.1x104 (ranged 1x104 - 1x107). Only 1 out of 12 patients who had primary EBV infection and treated with valacyclovir cleared EBV virus at 4th months of treatment. EBV viral loads did not change in 7/12 patients and decreased only 1 log10 (2 pts) or 2 log10 (2 pts) despite treatment. All of the patients remained asymptomatic and did not develop PTLD. In conclusion, In this small and not placebo controlled study, valacyclovir treatment was not effective on EBV viral loads. The beneficial effect of early valacyclovir treatment on primarily EBV-infected patients should be studied.
O-55
LIVER TRANSPLANTATION FOR CRIGLER NAJJAR SYNDROME TYPE 1

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Crigler-Najjar syndrome type 1 (CNS1) is characterized by severe unconjugated hyperbilirubinemia from birth, caused by total failure of UDP-glucuronyltransferase activity. Only liver transplantation (LT) can correct the metabolic defect totally and avoid irreversible neurological deficits. However, because the onset of neurologic deficits is unpredictable, timing of LT remains difficult. In our transplant center, 4 patients underwent living related liver transplantation (LRLT) for CNS1. Three of them were infants (2, 8.5 and 15 months old /5, 8, and 10 kg in weight). The 13 yr patient had no neurodevelopmental sequela except learning difficulties. Three patients’ parents were consanguineous. All patients required extensive phototherapy to control bilirubin levels. The 2 months old baby underwent phototherapy for only two weeks after birth. When he visited our hospital at the age of 2 months, his unconjugated bilirubin level was 30 mg/dl, and he had high pitched cry suggesting bilirubin encephalopathy. Plasmapheresis, intense phototherapy, and early LRLT performed to this patient. Other 2 patients (8.5 and 15 months) were neurologically normal. Three fathers and one mother were the donors. Three patients received left lateral segments and 1 patient received a left lobe. Biliary reconstruction was completed with a duct-to-duct anastomosis. One patient (8.5 months) experienced biliary leak and treated with repeated cholangioplasty. All patients had normal unconjugated bilirubin levels after transplantation. Three patients were alive with normal neurodevelopmental milestones for 1, 8 and 29 months after LRLT. One patient (2 months) displayed kernicterus signs (axial hypotonia, lack of head control, spasticity of lower limbs, feeding difficulties) and died following aspiration of gastric contents 10 months after the operation. In conclusion, Irreversible brain damage (kernicterus) may occur very early in the course of CNS1 disease. Despite urgent treatment modalities like plasmapheresis, phototherapy and LT irreversible brain damage may occur. Because no alternative treatment options are available at this time, LT should be performed as a preventive procedure to counteract severe CNS1-related complications.

O-56
PANCREAS TRANSPLANTATION IN SHIRAZ ORGAN TRANSPLANT CENTER; THE FIRST IRANIAN EXPERIENCE

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Pancreas transplantation (PTx) is the treatment of choice for selected patients with type 1 diabetes mellitus. We reviewed our first 40 patients who underwent PTx in Shiraz organ transplant center. Between April 2006 and April 2008, we performed PTx on 40 recipients. The operation included portal venous drainage and exocrine enteric drainage. Immunosuppressive therapy included prednisolone, tacrolimus, and mycophenolate mofetil. Ganciclovir was administered as prophylaxis for cytomegalovirus. The mean follow up was 10.06 ± 6.46 months (range, 1-24). Mean age of donors and recipients were 23.57 ± 8.20 and 32.33 ± 8.86 years, respectively. Mean pre-transplant insulin consumption was 43.75 ± 17.40 IU. Fasting blood glucose before transplantation was 275.47 ± 72.33 mg/dl that decreased to 95.60 ± 7.97 at 6 months follow-up (P=0.000). Complications were as follows: re-exploration (n=9), gastrointestinal complications (n=10), acute rejection episodes (n=12), chronic rejection (n=4). We had only one mortality case due to diffuse CMV and aspergillus infection 3 months after the operation with functioning graft. In conclusion, Good patient and graft survival in these series encouraged us to continue the program with all its difficulties.
POSTTRANSPLANTATION LYMPHOPROLIFERATIVE DISORDER AFTER LIVER TRANSPLANTATION: A SINGLE CENTER EXPERIENCE AMONG 500 PATIENT SERIES

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Posttransplantation lymphoproliferative disorders (PTLD) are defined as polyclonal or monoclonal proliferations, mostly of B cells, which occur after solid organ transplant. Herein we report four liver transplant patients who developed PTLD in the early post transplant period. We retrospectively analyzed four cases of PTLD after liver transplantation among more than 500 liver transplants in our center. Two in pediatric age group and two adult with tyrosinemia, autoimmune hepatitis and HCV hepatitis as the primary cause for cirrhosis respectively. All the cases were diagnosed during the first year after liver transplantation. The patients were diagnosed as PTLD, B cell type, MALT type and Hodgkin’s like. The two pediatric patients died in spite of discontinuing immunosuppressive drugs and chemotherapy. In conclusion, incidence of PTLD in our center is lower than previous reports (0.8%) with 50% mortality rate and worse prognosis in pediatric age group.

HOW WE IMPROVE RENAL TRANSPLANTATION IN TUNISIA?

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In Tunisia 7200 patients with chronic renal failures are dialyzed, that corresponds to 720 dialysis patients / million ofhabitants. From the first kidney transplantation in Tunisia in 1986, and to the end of 2004, the number of kidney transplantation has never exceeded 43 cases per year. During the period 2005-2007, improvement of transplant kidney activity from living donor allowed to raise the number of kidney transplant patient: 62 cases in 2005, 70 cases in 2006, 89 cases in 2007 and we hope to reach 120 cases in 2008 (81 kidney transplantation are made until June 30, 2008). However the policy of active search for living donors among family members of the dialysis patient revealed a problem of limited capacity of the nephrology and urology departments to manage this excess of candidates to transplant. In 2007 kidney transplantation from living donors was about 7 cases/million ofhabitants. In addition, the transplant activity from brain death donors remained very low. It was about an average of 0.7 cases / million ofhabitants per year. We have to get around several obstacles of which: the absence of effective network allowing an inventory of all the potential donors (brain death cases in critical cares departments), the absence of a codification of the potential donor’s cares and the opposition of the family to take organs from dead related.

To resolve these problems the scientific council of the Tunisian national promote center of transplantation (CNPTO) approve the following strategy: 1 - To increase the capacity of department involved in kidney transplantation, we adopt the approach “objective – agreement” which consists through a gradual allowance of standard personnel and financial attributed to transplantation’s unities to attain predefines objectives of transplantation. 2 - For persons in state of brain death and through an international collaboration we began a professionalized training for various actors of the transplantation with an intension to set up a national register of the brain death’s donors by 2012.
O-59
FACTORS INFLUENCING THIRD-PARTY CONSENT FOR ORGAN DONATION IN BRAIN DEAD INDIVIDUALS


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Our aim was to identify factors which may influence legal guardians and/or family members to give third-party consent to harvest organs from brain dead individuals. We extracted available data from the files of 200 brain dead patients whose families were approached by the Transplant Coordinator Office for organ donation. One hundred files were chosen from those with third-party consent for organ harvest (group I) and 100 who had not given consent (group II). We extracted data regarding age, sex, place of residence, occupation of patient, educational level of the patient and the 4 members giving third-party consent, cause of hospitalization, operations performed during admission, Glasgow score on admission, elapsed time from admission to brain death and from announcing brain death until obtaining consent in group I. Numerical data were analyzed using the independent single t-test and nominal data by Pearson or Fischer’s exact test. From the 4 individuals giving consent the first one was invariably the most important (i.e. parent (usually father) or legal guardian). Interestingly from all the data only the level of education of the third and fourth third-party consent giver was significantly higher in group I when compared to group II (p=0.036, p=0.042 respectively). The patient’s level of education was not significantly different between the two groups (p=0.057). All seven suicide cases had given consent. It seems that the education level of consent givers who had a supporting role in the process and were not necessarily parents or legal guardians played a prominent role in obtaining consent.

O-60
BRAIN DEATH AND ORGAN DONATION

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Since the pioneer description of Mollaret and Goulon in 1959, the concept of brain death has evolved over the years and the clinical triad of complete and irreversible coma, loss of spontaneous respiration and abolished brain stem reflexes has gained universal acceptance designating brain death. The debate is over the time, number of physicians deciding and confirmatory laboratory tests. The most important practical consequence of brain death is harvesting healthy organs for transplantation. In Turkey the law requires four physicians (anesthesiologist, cardiologist, neurologist and neurosurgeon) for determination and declaration of brain death. In the year 2007, the reported number of brain deaths in Turkey has been 563. In 349 (58.75 %) cases families refused organ donation. In 245 (41.24 %) patients family response was positive. In this group 22 patients proved to be unsuitable donors either for medical reasons or occurrence of cardiac arrest in the meantime. Finally 223 (37.54 %) cases became donors which corresponded to 3.18 donors/million population, which is very below the ideal number of 40 donors/million population. The organs harvested from these patients were: 397 kidneys, 197 livers, 63 hearts, 102 corneas, 14 pancreases, 2 lungs and 2 duodenums which totaled to 777 organs. The brain deaths reported in Turkey from 2002 until 2006 were 148, 163, 220, 229 and 270 respectively. The increase of brain death cases as shown by the above figures is not sufficient for supplying the need of patients waiting for organs. The medical staff should receive more education about the subject and people need more information including different aspects of the problem which eventually would promote organ donation.
CARE OF PEDIATRIC DONOR’S FAMILY

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Care of pediatric donor’s family In France, when a brain death diagnostic is made in a reanimation unit the doctor notifies the coordinator nurse of a potential donor. This one, according to the bioethics law, has to endeavor to meet the donor’s relatives to collect from them his position on organ donation. The meeting with the family of a pediatric donor is a difficult and dreaded event. What difference with an interview with the family of an adult? Essentially three points: context (child’s death is particularly an unacceptable event, the coordinator can have a child of the same age), rise of emotions (generated by the distress of the parents) and absence of potential donor’s opinion (the coordinator can not rest on the law). Consequently the interview is made more difficult and requires a great psychological energy. How can a coordinator lead the discussion? There is no recipe, just some keys. For example it is important to let one’s place too a colleague if it is too difficult. It is interesting to know that, actually, the meeting takes place in an atmosphere favorable to discussion. The coordinator does not stay alone with the family because the reanimator generally attends the discussion. Finally the way to begin the interview is the same as for an adult: it is important too make sure that brain death is well understood and it is essential to explain that the process can be stopped if no compatible patient is found. After the interview there is the time of procurement. It is difficult for all the participants too. A debriefing with the medical and paramedical staff and also with the other members of the coordination team is particularly necessary. To be able to continue the mission of procurement but also because life must go on…

OUR EXPERIENCE WITH ORGAN PROCUREMENT FROM HEMODYNAMICALLY UNSTABLE BRAIN DEAD PATIENTS

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Effective organ procurement is the result of meticulous care to brain dead patients. Hemodynamic instability may occur in these patients and, if not managed and treated carefully, may lead to loss of precious organs. The aim of the current study is to evaluate the hemodynamic status of brain dead patients and its effect on organ donation. We retrospectively studied all hospitalization records of brain dead patients at Mashi Daneshvari Hospital, Tehran, Iran. We reviewed the patients’ status during hospitalization for organ retrieval for their homodynamic condition to see if they had stable or unstable condition. We then followed all cases to see if the hemodynamic condition of the patients had an effect on organ harvest result. For data analysis we used Chi-square test. In the studied brain dead patients, 95.2% were hemodynamically unstable. Organ procurement was successful in 87.2% of unstable patients. Organ procurement was successful in all patients with stable condition. Unstable hemodynamic condition of the patients had no effect on the rate of successful organ retrieval (p= 0.588). The majority of brain dead patients in our center were in unstable homodynamic state. Such condition may have no significant effect on success rate of organ procurement. Proper care for brain dead patients would increase the success rate of organ procurement even in hemodynamically unstable patients.
P-1
DE NOVO ULCERATIVE COLITIS AFTER PEDIATRIC LIVER TRANSPLANTATION

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It was anticipated that the course of preexisting inflammatory bowel diseases (IBD) should improve after orthotopic liver transplantation (OLT). However, exacerbation of IBD or the development of de novo IBD after OLT was described despite sufficient allograft immunosuppressive therapy. Here we report a 13 years old boy who underwent liver transplant from deceased donor for cryptogenic liver cirrhosis. Five months after transplantation the patient presented with continuous diarrhea and abdominal protrusion. He received tacrolimus and mycophenolate mofetil as immunosuppressive medications. General physical examination revealed a boy with stable vital sign and without fever. The only positive finding in physical examination was enlargement of the abdomen without tenderness. Laboratory tests showed alkaline phosphatase 2160 IU/L, total bilirubin 28.1 mg/dL and direct bilirubin 13.5 mg/dL. Prothrombin time was 18 seconds and INR was 2.14. The patient underwent colonoscopy due to chronic diarrhea. Colonoscopy showed diffuse erythematous mucosa and multiple exudative ulcers and pseudopolyps with diffuse loss of vascularity. All of these were indicators of colitis. Histopathologic examination of colon biopsy was in favor of ulcerative colitis. The patient received mesalasine and prednisolone led to rapid clinical improvement that was confirmed by colonoscopy 5 weeks later showing a normal mucosa, with only mild inflammation on histopathologic examination of colon biopsy. The lesson we learned from this case is that when the patient developed chronic diarrhea after liver transplantation, IBD should be consider in differential diagnosis, and the patient should undergo colonoscopic examination.

P-2
PERCEPTIONS OF ORGAN DONATION IN INTERNET DISCUSSION FORUMS IN IRAN: A QUALITATIVE RESEARCH

Shervin Assari

According to the lack of knowledge from Iran, the focus of the current study is an attempt to evaluate discussion forums about organ donation in Iran. This qualitative study, among all internet web pages in Iran carried out in 1 September 2008 in Medicine and Health Promotion Institute -a research institute- in Iran. The Internet discussion forums and weblogs in Iran were evaluated by a check list. Several discussion forums in Iran contained issues regarding organ donations. The content of the forum was mostly regarding donation definition*, donation characteristics, experiences, perception, and brain death. Extending the discussion forums in the organ donation may be a way for transplantation enhancement in Iran.
**P-3**

**LIVING WITH TRANSPLANTED LIVER**

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Today, liver transplantation is a routine procedure in the treatment of patients with end stage liver disease and survival rate is high. In order to promote health, nurses and other health care professionals need to discover and articulate the meanings of lived experiences after liver transplantation. It is important for nurses to know what patients really experience; Appropriate-nursing intervention can be extracted from such an understanding. The purpose of this study was to answer the research question: what is the structure of the lived experiences of liver transplant recipients? A Phenomenological approach was chosen for the study. The purpose of phenomenological research is to describe experiences (or phenomena) as they are lived – in phenomenological terms, to capture the “lived experience” of study participant. Unstructured and open – ended interviews were conducted with 9 liver transplant patients. The method of analysis described by colaizzi (1978) was utilized to provide a rich description of the essential structure of the phenomenon. Seven categories emerged: support, gradual adaptation, transplant outcomes, concerns, fallow up, gratitude and waiting for transplant. Their physical and mental problems prevented those fulfilling personal goals before transplant. Although they had some concerns such as fear of graft rejection, they were at the peace with the world after transplantation. Liver transplant recipients seem to adapt to their situation gradually. Life long medications were identified insignificant to the participants. Social support was essential for recovery. Meeting other patients in the same situation as well as sharing health and life experiences is an important aspect among liver transplant patients .Health professional were universally praised in the study however the fallow up care they received from them was not desirable. These findings have two implications: firstly, health professional especially nurses should take a more active role in continuity of care for such clients. Secondly, the support patients give each other should be encouraged and aided by hospitals.

**P-4**

**EFFECT OF D-PENCILLAMINE ON LIVER FIBROSIS AND INFLAMMATION IN WILSON’S DISEASE**

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Background: Wilson’s disease (WD), a disorder of copper metabolism characterized by copper overload and autosomal recessive inheritance was first described in 1912. Mutation in ATP7B causes dysfunction of ATP7B protein and reduction in copper excretion into bile in hepatocytes and excess copper accumulation leads to liver injury. D-Pencillamine primarily can inhibit fibrogenesis and preventing the appearance of scar lesions in liver, we studied this phenomenon in our patients retrospectively.  

**Material & Method:** Pathologic slides from explanted liver of 26 patients diagnosed as having WD with hepatoneurological manifestation between 2000-2008 who treated with liver transplantation (LTx) at Namazi hospital were investigated retrospectively. Patients divided into two groups according to history of D-Penicillamine consumption before transplantation. Degree of fibrosis and inflammation classified as: mild (I), moderate (II) and severe (III) and reviewed by an impartial hepatopathologist.

**Results:** Of 26 cases (20 male, 6 female) with mean age of 17.6±8.6 years of WD, 69%(18/26) had history of D-Penicillamine use before LTx from 6 months to 9 years (mean 3.4±2.7 years). In Penicillamine group, 14 patients (77%) had grade I fibrosis. Grade II and III fibrosis were seen in 5.6 and 16% of patients, respectively. In inflammation: grade III 44%(8/18), grade II 44%(8/18), and grade I 11%(2/18). In non-Penicillamine group (8 cases), grades of fibrosis and inflammation were as follows: grade III 62%, grade II 25%, inflammation: grade I 12%, grade III 87%, grade I 13%, respectively. In Penicillamine group the degree of fibrosis was significantly lower than non-Penicillamine (p<0.05).

**Conclusion:** D-Penicillamine may reduce the rate of liver fibrogenesis in patients with WD as found in this study.
P-5
ASSESSMENT OF PSYCHIATRIC DISORDERS AND THEIR TREATMENTS IN PATIENT WAITING FOR ORGAN & TISSUE TRANSPLANTATION

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Nowadays knowledge and ability of organ transplantation increases life expectancy and quality of life in patient with progressive organ failure. Organ transplantation programs have also developed a lot in past 2 decades. In this condition, consultation with psychiatrists has an important role to help patients and their families to comfort with their psychological problems. Patients in waiting list experience more anxiety and depression than others. It seems that being longer in waiting list affects more on health and daily function. We conducted a cross-sectional survey among 352 patients in waiting list for organ transplantation whom they had psychiatric consultation before operation. Screening & diagnosis of psychiatric disorders was based on DSM IV criteria. We extracted some data about transplantation in receiving contraindications and their treatment from their consultation papers and files. Finding: Although 231(56%) from 352 patients had no psychiatric disorders, 121(34%) had disorders such as depression, anxiety, mixed anxiety & depression, post traumatic stress disorder (PTSD), addiction & other disorders in axis I From this 121 patients only 58(46%) received treatment for 39 patients and consultation 19 patient and 63 patient didn’t receive any treatment. In conclusion, patients with progressive organ failure are affecting by psychiatric disorders about 3 times more than normal population & only less than half of them receive sufficient treatment.

P-6
SAFETY OF CYCLOSPORINE ADMINISTRATION BEFORE TRANSPLANT SURGERY IN KIDNEY ALLOGRAFT RECIPIENTS

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It is well recognized that graft dysfunction immediately post-transplant can vary from a subtle slowing of the expected decline in Cr to frank oliguria requiring dialysis for days to weeks. Identified risk factors for slow and DGF have included prolonged preservation, increased donor age, and high recipient PRA. Cyclosporine nephrotoxicity is one of the other causes of early post transplant kidney allograft dysfunction. The aim of this study was evaluation of the early kidney allograft function in patients who were on cyclosporine 48 h before transplant surgery and compare it with recipients who received cyclosporine after improvement of allograft function. In a comparative study, 62 kidney allograft recipients from living unrelated donors were divided into two groups based on the time of cyclosporine beginning. Group 1: kidney allograft recipients who received cyclosporine from 48 h before transplant surgery (100 mg BID). Group 2: patients who had received cyclosporine after transplantation when allograft function improved (serum creatinine < 3mg/dl). Others immunosuppressive medications were the same in both groups. Statistical analysis was performed using SPSS version 14 to compare kidney allograft function within the first month after transplantation in two groups. The results showed: group 1: Mean blood urea and serum creatinine were 73.72±31.00 mg/dl and 5.11±1.83 mg/dl, the day after transplantation that was that was reduced to 49.61±12.18 mg/dl and 1.22±0.28 mg/dl at the end of admission respectively. Mean 24 h urine volume was also 11052±4290 ml the day after transplantation and 3202±986 ml at the end of admission. Group 2: Mean blood urea and serum creatinine were 87.52±29.82 and 6.42±3.64 the day after transplantation that reached to 69.11±33.76 mg/dl and 1.47±0.79 at the end of admission respectively. Mean 24 h urine volume was also 9629±4530 ml the day after transplantation and 3095±726 ml at the end of study. There was no significant difference regarding the age, gender and immunosuppressive medications between the two groups. In conclusion it seems that early and low dose cyclosporine administration before transplant surgery accompanied with well preserved early allograft function without any deleterious effect.
POSTTRANSPLANT LYMPHOPROLIFERATIVE DISEASE IN PEDIATRIC LIVER TRANSPLANT RECIPIENTS

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Posttransplant lymphoproliferative disease was first reported in 1968. Posttransplant lymphoproliferative disease encompasses a spectrum of abnormalities ranging from a benign infectious mononucleosis-like illness to non-Hodgkin’s lymphoma with nodal and extranodal site involvement. In this study, we evaluated 5 children who had posttransplant lymphoproliferative disease after liver transplant. Since 2001, we have done 111 liver transplants in 108 children at our center. Five children (4.6%; 3 female, 2 male; mean age, 3.9 years) developed posttransplant lymphoproliferative disease. The indications for liver transplant were hepatoblastoma in 1 recipient and cholestatic liver disease in the remaining 4. Posttransplant lymphoproliferative disease was diagnosed 6, 11, 17, 22, and 27 months after liver transplant. Imaging modalities identified generalized lymphadenopathy in 1, multiple liver masses in 1, a large portal mass in 1, multiple stomach ulcers in 1, and a large mediastinal mass in 1 recipient. At the time of diagnosis, 1 recipient with a large mediastinal mass had a cough; the remaining 4 recipients were asymptomatic. Histologic findings showed B-cell lymphoma in 3 recipients and T-cell lymphoma in 2. The result of in situ hybridization for Epstein-Barr virus was negative in 1 recipient and it was positive in 4. Four recipients were treated with chemotherapy; the remaining recipient was treated with anti-CD20 monoclonal antibodies (Rituximab). One recipient who had a large mediastinal mass died 2 months after diagnosis due to chemotherapy-related sepsis; the remaining 4 children are alive at the time of this writing at 9, 11, 18, and 34 months after treatment. Our rate of posttransplant lymphoproliferative disease is similar to that published in the literature. From a few months to several years after liver transplant, radiologists must be alert to the possibility of posttransplant lymphoproliferative disease. Thorough imaging is required to detect the wide variety of potential presentations.

SIROLIMUS FOR RESCUE OF STEROID AND ANTI-THYMOCYTE GLOBULIN RESISTANT RECURRENT ACUTE REJECTION AFTER LIVER TRANSPLANTATION: REPORT OF ONE CASE

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Acute liver allograft rejection (AR) episodes refractory to antilymphocyte preparations almost inevitably progress to transplantation loss. Sirolimus (SRL) rescue therapy for refractory rejection in renal transplantation has been reported in literature but information regarding rescue therapy for refractory rejection in liver transplant is scarce. To reverse ongoing rejection processes, we administered SRL after failure of conventional immunosuppressive regimens including full courses of antilymphocyte sera. Compared with the calcineurin inhibitors, SRL has different mechanisms of action and side effects profile. Thus, this drug offers significant potential advantages over other immunosuppressive agents. SRL inhibits the signal of interleukin 2 at a post-receptor level, inhibiting lymphocyte proliferation and fibroblast proliferation. It also has antineoplastic and antifungal effects. We report a 26 years old man who underwent Orthotopic Liver Transplant (OLT) due to hepatitis C related liver failure, experiencing a biopsy-proven recurrent acute rejection (AR) following 2 weeks after transplant. The patient initially received two 20-mg doses of basiliximab (days 0 and 4 after OLT) followed by tacrolimus (0.15 mg/kg/day; 10-15 ng/mL target through levels), steroids (methylprednisolone 1 g intraoperatively followed by tapering doses) and mycophenolate mofetil (MMF) 1 g every 12 hours. Steroid resistant acute rejection episodes did not respond to anti-thymocyte globulin treatment. The patient was rescued with SRL, not experiencing AR again. MMF and steroids were continued and tacrolimus treatment was stopped, without experiencing severe complications. SRL is a new and safe immunosuppressive agent to rescue patients with OLT and recurrent AR.
RESULTS FROM HEPATIC ARTERIAL RECONSTRUCTION TECHNIQUE FOR PEDIATRIC LIVING-DONOR LIVER TRANSPLANTATION

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The arterial reconstructions required in living donor liver transplantation (LDLT) are technically difficult because of the small diameters of the vessels in the partial liver graft. In this study, we present our new hepatic arterial reconstruction technique. Between September 2001 and August 2008, we performed 190 LDLTs at our center. After December 2005, we changed our hepatic arterial reconstruction technique. Since then we’ve performed 114 LDLTs, 60 of which were pediatric recipients which were analyzed retrospectively. In this technique, native and graft hepatic arteries are spatulated from both the anterior and posterior walls for a wider anastomosis. Twenty-two of these recipients were infants and 28 of them weighed less than 10 kg. One of the recipients received a right lobe, 24 received a left lobe, and the remaining 35 received left lateral segment grafts. 85% of the donors were the recipient’s parents. Computed tomography (CT) angiography was used to evaluate both the vascular anatomy and the diameter of graft hepatic arteries. Hepatic arterial reconstruction was performed with microvascular technique using a surgical loop (2.5x) in all recipients by the same surgeon. Fifteen grafts had 2 hepatic arteries. In 11 grafts with double arteries, the adjacent edges of the hepatic arteries were sutured together to create a single opening, and the recipient common hepatic artery was then anastomosed to that orifice. In 4 grafts with double arteries, 2 separate anastomoses were performed between the graft hepatic arteries and the recipient hepatic artery branches. Mean diameter of the hepatic arteries was 2.3 ± 0.5 mm, and 26 of them were less than 2 mm. The 9 months (range, 1 to 32 months). Six of the 60 mean recipient follow-up was 16 recipients died and the remaining 54 (90%) are still alive with good graft functions. HAT was encountered in 2 (3.3%) recipients in this series. All of them were treated with interventional radiologic approaches. In conclusion, our new arterial reconstruction technique enabled the reconstruction of smaller arteries, multiple arteries and arteries with caliber differences even for the very small pediatric recipients.

PEDIATRIC LIVER AND KIDNEY TRANSPLANTS: EXPERIENCES AT ONE CENTER

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Various immunologic, metabolic, and technical factors render pediatric recipients with end-stage renal or liver diseases unique from their adult counterparts. In addition, the potential for complications after renal or liver transplants are far greater in children than it is in adults. In this study, we retrospectively analyzed the clinical features of our pediatric recipients who had undergone a kidney or a liver transplant at our institution since 1985. Since that time, 1385 renal transplants were done at our institution. Of these, 124 procedures were performed on 122 pediatric patients (67 male and 57 female patients; mean age: 14.9 ± 2.2 years; range: 4-17 years). Grafts had been obtained from a deceased donor in 31 cases. Two patients (1.6%) underwent a retransplant at 4 and 2 years after the initial operation. Eight grafts failed, and 7 recipients died with a functioning graft during the follow-up. The 1- 3-, 5-year patient and graft survival rates were 98%, 93%, and 92%, and 91%, 78%, and 67%, for living-related transplants compared with 98%, 91%, and 90%, and 92%, 76%, and 65% for deceased donor transplants, respectively. Since September 2001, of the 239 liver transplants, 7 deceased-donor and 97 living-donor liver transplants had been performed on 101 children (mean age, 6.7 ± 5.5 years; range 2 months to17 years). Main indications for liver transplant were cholestatic liver disease, biliary atresia, Wilson disease, fulminant liver failure and tumors. The median pediatric end-stage liver disease score was 23.1 ± 11.1 (range, -8 to 48). The median follow-up was 24.2 ± 19.4 months (range, 1-77 months). Three children underwent retransplant. The main complications were infections (31.3%) and surgical complications (39.5%) (including biliary complications and vascular problems). Sixteen children died during follow-up, and, at the time of this writing, the remaining 85 children (85%) were alive with good graft functioning, showing patient survival rates of 90%, 85%, and 83% at 6, 12, and 36 months, respectively. In conclusion, better outcomes for renal and liver transplants in children may be obtained by strict adherence to precise surgical techniques, better immunosuppressive management, and early diagnosis and effective treatment of complications.
P-11
EFFECTS OF LAMIVUDINE TREATMENT ON DE NOVO HEPATITIS B INFECTION AFTER LIVER TRANSPLANTATION IN CHILDREN

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We investigated the effect of lamivudine on de novo Hepatitis B infection after pediatric LT. 51 liver transplanted children were included to the study. Eight patients (15.6%) aged 1-13 years, developed de-novo HBV infection median 14 months (5-36 months) after LT. Five of them received a liver from antiHBcIgG (+) donor. None of the patients received lamivudine or HBIG prophylaxis after LT. At the time of de novo hepatitis B infection AST and ALT were higher than normal (40 IU/mL) in 3 patients. AntiHBcIgM was positive in 2 of 6 patients tested. HBV viral loads ranged between 7x10^5 IU/mL-4.2x10^9 IU/mL. Liver biopsy was available in 4/8 patients. Two patients had chronic portal inflammation, 1 patient had portal mixed type inflammatory cell infiltration, and 1 patient had acute hepatitis histologically. Lamivudine treatment (5 mg/kg/day) was given all 8 patients for median 26 months (7-39 months) following the diagnosis of denovo hepatitis B infection. Only 1 patient out of 8 who received lamivudine for 10 months cleared HBV DNA and HBsAg, and became AntiHBs and AntiHBe positive. This patient had acute hepatitis characterized by elevated AST/ALT (400/500 IU/mL), positive AntiHBcIgM, and acute hepatitis findings in her liver biopsy. Although lamivudine was stopped, this patient remained negative for HBsAg after 1.5 years. In the remaining 7 patients HBV DNA decreased 1-3 Log10 in 4 patients and increased 1-2Log10 in 3 patients. Lamivudine resistance (YMDD mutation) was detected in 2 out of 3 patients whose HBV DNA level increased on 30th and 22nd months of treatment. Lamivudine combined to adefovir dipivoxil in these patients and HBV-DNA decreased 4 Log10. However all these 7 patients remained positive for HBsAg, HBeAg, and negative for AntiHBs and AntiHBe. In conclusion, lamivudine treatment during acute phase of de novo hepatitis B infection was beneficial. Antiviral treatment was not effective in most of our patients who had chronic de novo hepatitis B infection.

P-12
17 YEARS EXPERIENCE OF HEMATOPOIETIC STEM CELL TRANSPLANTATION IN IRAN

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Our center activities have started in 1991 in order to help patients in need and augment new data to reach new aspects of therapeutic trials. Also it is one of the greatest bone marrow transplantation centers in the world and is the second center in the world transplanting thalassemic patients. Also this center is doing scientific activities, so that it has presented over 250 assays in international congresses and also more than 150 thesis has been performed. Since the year 1991, when bone marrow transplantation was performed for the first time on three patients with Acute Myelogenous Leukemia(AML), Acute Lymphoblastic Leukemia (ALL) and Ewing Sarcoma, 2376 Hematopoietic Stem Cell Transplantation (HSCT) have been performed in patient with different diseases . There are 1538 cases that have received allogeneic HSCT and 703 cases that have received autologous HSCT. The first peripheral blood HSCT was performed in 1997 and since then, 1840 patients were done with this method. The first cord blood HSCT was performed in 1998 and since then there are 14 patients received HSCT from cord blood. We had 121 patients with Cellular Therapy (a technology that relies on replacing diseased or dysfunctional cells with healthy, functioning ones) for post MI, Thalassemia major, Multiple Sclerosis, Cirrhosis, Head of Femour Necrosis and Renal Cell Carcinoma. Recently, new methods have been used like low intensity conditioning regimen (non myeloablative) and Donor Lymphocyte Infusion (DLI).This center is the member of the International Blood and Marrow Transplantation Registry (IBMTR) and European group of Blood and Marrow Transplantation (EBMTR). So that gives help to researchers for a better understanding of transplantation and invent new therapeutic methods. Our center is the member of Asian Pacific Cancer Center (APCC) and also we are collaborating with Blood and Cancer Associations such as American Society of Hematology (ASH), International Society of Hematology (ISH), and European School of Medical Oncology (ESMO), American Society of Clinical Oncology (ASCO), and other centers. The plans and aims include protraction of cytogentetic and molecular biological diagnostic tests, invention of a cord blood bank and develop the research activities in these fields.
P-13
COMBINED TH2 CYTOKINE DEFICIENCY IN DONOR T CELLS AGGRAVATES EXPERIMENTAL ACUTE GRAFT-VS-HOST DISEASE
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The role of T helper (Th) 1 and Th2 polarization in acute graft-vs-host-disease (GVHD) is unclear. We investigated the role of Th2 cytokine secretion by utilizing donor T cells that cannot make interleukin (IL)-4, IL-5, IL-9, and IL-13 from quadruple cytokine-deficient (Quad-KO) animals in a well-characterized BALB/c→C57BL/6 model of allogeneic bone marrow transplantation. B6 recipients of BALB/c Quad-KO T cells demonstrated greater clinical severity, target organ damage, and mortality from GVHD than recipients of BALB/c wild-type (WT) T cells. When compared with donor T cells that are deficient in signal transducers and activators of transcription 6 signaling or the signature Th2 cytokine, IL-4, Quad-KO T cells demonstrated greater GVHD mortality. Mechanistic studies demonstrated that Quad-KO T cells demonstrated enhanced T-cell proliferation than WT T cells when stimulated with either allogeneic antigen-presenting cells or with nonspecific stimuli, such as anti-CD3 monoclonal antibody. Quad-KO T cells also secreted greater amounts of Th1 cytokines and IL-17 compared to WT T cells. Deficiency of Th2 cytokines, however, did not alter the allospecific cytotoxic responses, the numbers of immunoregulatory CD4+CD25+ Foxp3+ T cells or their suppressive functions. Our data thus unequivocally demonstrate that deficiency of the four classical Th2 cytokine enhances T-cell proliferative responses and aggravates GVHD.

P-14
ETIOLOGIES OF CHRONIC LIVER DISEASES IN LIVER TRANSPLANT PATIENTS FROM 1991 TILL 2008 AT SHIRAZ TRANSPLANT CENTER
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Liver cirrhosis is the terminal condition of liver disorders resulting from various causes. Literature lacks data on epidemiological and clinical aspects of liver cirrhosis in Iran. Clearly, Iran has a high prevalence of viral hepatitis. It is clear that we need to know all the clinical and epidemiologic characteristics to propose national actions to try to control and prevent this disease. Because of the important role of etiologic factors in the management and treatment of cirrhotic patients and early diagnosis of liver disease in family members for prevention of disease, we should have accurate information about epidemiology and etiologic factors of cirrhosis. We aimed to evaluate the main features of liver cirrhosis in this study. A retrospective study was done on cirrhotic patients underwent liver transplantation from 1991 till 2008 in Namazi Hospital, Shiraz, Iran. The records of 225 patients were reviewed for finding the etiology of cirrhosis according to their age; sex; personal and family history; laboratory tests and radiologic studies. Then etiologies were classified according to sex and age. To find incidental pathologic findings; liver of recipients were reviewed by two experienced pathologist. Data were entered in spss ver: 13 and analyzing. Charts of 225 patients including 79 women and 146 men with mean age 31.8(range 2-62 years) were reviewed. The etiologic spectrum consisted of chronic hepatitis B 44 (19.6%), autoimmune hepatitis 41(18.2%); primary sclerosing collangitis 29(12.9%); Wilson 23(10.2%); chronic hepatitis C 8 (3.6%); cryptogenic cirrhosis 55 (24.4%); hepatocellular carcinoma and cholangiocarcinoma (each in 4%);primary biliary cirrhosis 3(1.3%)and alcoholism 2 halothane toxicity; tyrosinemia, Byler’s disease (each in 0.9%);congenital hepatic fibrosis 1(0.4%). In women the most common etiologies were autoimmune hepatitis; cryptogenic cirrhosis and primary sclerosing collangitis respectively. But in men hepatitis B and C were the main etiologies of liver failure. In age group under 15 years autoimmune hepatitis and secondary cholestasis; group 15-30 autoimmune hepatitis and then Wilson and in age group 31-50 and older than 50 years hepatitis B virus were the most prevalent etiologies in our study. (table 1) The most common incidental pathologic findings were chronic hepatitis and secondary cholestasis (each in 7 cases) and then hepatobiliary carcinoma (3) cases. In conclusion liver cirrhosis principally affects males. Most patients were between 31-50 years. The principal known cause is chronic viral hepatitis (B). Despite high prevalence of alcoholism in west, alcoholic cirrhosis is not a common cause of chronic liver failure in our country. Autoimmune hepatitis is the main cause of cirrhosis in children under 15 years like other studies in Iran.
ELECTROLYTE DISTURBANCES IN BRAIN DEAD, ORGAN PROCUREMENT DONORS – A TWO YEAR STUDY AT MASIH DANESHVARI MEDICAL CENTER, TEHRAN, IRAN

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Electrolyte imbalances may be very important in care of brain dead, organ procurement donors as well as outcome of recipients of organs. During a two year period, 50 brain dead patients were studied. Electrolytes were checked early after transporting to hospital and every 6 hours thereafter. Result of lab findings collected and analyzed by proper statistical methods. 50 patients studied from an Electrolyte imbalance point of view. Na+ disturbance was present at 25 patient (50%), K+ disturbance at 4 cases (8.3%), and Ca ++ disturbance at all (100%) of cases. Cl- & Po4++ disturbance were not of clinical importance (P = 0.118). In conclusion, electrolyte disturbances are important factors in care of brain dead patients and can affect short and long –term outcome of recipients of procured organs. Due to importance of electrolyte imbalance correction in better outcome of transplantation of organs, it seems that precise care and early correction of electrolyte imbalances is mandatory in brain dead donors.

BLOOD GLUCOSE DISTURBANCES IN BRAIN DEAD, ORGAN PROCUREMENT DONORS – A TWO YEAR STUDY AT MASIH DANESHVARI MEDICAL CENTER, TEHRAN, IRAN

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Blood sugar imbalances may be very important in care of brain dead donors as well as recipients of organs. During a two year period 50 brain dead patient were studied. Blood sugars samples (BS) were checked early after transporting to hospital and every 6 hours thereafter. 22 (44%) cases had normal blood glucose levels all time during pre-procurement care period and 28(56%) cases had some degrees of blood glucose imbalances during this period (P<0.005). In 5 cases (10%) disturbance presented as both hypo- & hyper-glycemia. Severe disturbances presented in 16 cases (32%). In conclusion, blood sugar disturbances are important factors in care of brain dead patients and can affect short and long –term outcome of recipients of procured organs. Due to importance of blood sugar imbalance correction in better outcome of organ transplantation, it seems precise care and early correction of glucose imbalances is mandatory in brain dead donors.
P-17
HA-1(MINOR HISTOCOMPATIBILITY) ROLE IN AND GVHD AFTER HSCT

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It is suggested that HA-1 mismatching between hematopoietic stem cell transplanted recipients-donors is associated with acute graft-versus-host disease (aGVHD). So the aim of this study was to evaluate HA-1 frequency and examine the correlation between HA-1 disparity and GVHD patients who received transplantation from a HLA-identical sibling. DNA was extracted from 30 pairs of HLA-A2-positive Iranian recipients-donors with GVHD I-IV and 25 pairs without GVHD. All the patients received HSCT from HLA-identical siblings. HA-1 was detected by SSAbstract# P-PCR method By using SSP Minor Histocompatibility Antigen primer sets. Results: The frequency of HA-1R and HA-1H alleles in patients were 0.55 and 0.45 respectively, which showed no significance difference with these alleles frequency in donors (0.53 and 0.47, p>0.05). HA-1 disparity was detected in 8 of the 55 donor/recipient pairs (14.5%). aGVHD (grades I-IV) was occurred in 6 (75%) out of 8 patients but in spite of the higher incidence of aGVHD in the group of patients with HA-1 incompatibility, did not show any statistically significant. In conclusion, in spite of higher frequency of HA-1 disparity in GVHD+ group our data did not reflect significant association between HA-1 disparity and risk of acute GVHD.

P-18
STUDY THE RELATIONSHIPS BETWEEN ANTI-GVHD DRUG REGIMEN AND HUMAN CYTOMEGALOVIRUS INFECTIONS IN BONE MARROW TRANSPLANT RECIPIENTS.

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More than 90% of worldwide populations are infected with human cytomegalovirus (HCMV) which is one of the most common agents which complicate immunocompromised patients especially bone marrow transplant (BMT) recipients. For active and/or latent HCMV infection diagnosis of HCMV disease risk factors which increase the risk of post transplant morbidity and mortality are needed. In this research data of 104 BMT recipients and their donors include personal characteristics, history of HCMV infection, grade of GVHD, anti-GVHD prophylactic and/or therapeutic regimens were reviewed for 100 days post-transplantation period. This data also statistically analyzed for possible correlation with HCMV-PCR results. Anti-HCMV-IgM was detected in 9.6% and 6.7% and was not detected in 83.6% and 89.2% pre-transplantation in BMT recipients and donors respectively. Anti-HCMV-IgG also was detected in 8.7% and 9.1% pre-transplantation in BMT recipients and donors respectively. HCMV-PCR results were positive in 20% and 33.3% and were negative in 80% and 66.7% pre-transplantation in BMT recipients and donors respectively. Significant correlations were observed between HCMV-PCR positive results with the use of anti-GVHD therapeutic dose of glucocorticoids and cyclosporine. Significant correlations were not detected between prophylactic dose of glucocorticoids and cyclosporine, and therapeutic dose of cellcept with HCMV-PCR positive results post-transplantation in BMT recipients. Anti-GVHD therapeutic regimens of glucocorticoids and cyclosporine are recommended as possible risk factors on prognosis of HCMV disease and monitoring of HCMV diagnosis and treatment in BMT patients.
IS THERE ANY RELATIONSHIP BETWEEN SERUM HOMOCYSTEINE AND OTHER PARAMETERS IN RENAL TRANSPLANTED PATIENTS?

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Hyperhomocysteinemia seem to be frequent after renal transplantation. A cross-sectional analysis of 47 patients (30 males, 17 females) receiving unrelated living renal transplantation was carried out to determine the prevalence and important clinical and laboratory correlates of hyperhomocysteinemia. The mean total plasma homocysteine (Hcy) concentration was 21.7±8.4 (range, 5.8-48). Prevalence of hyperhomocysteinemia (Hcy ≥ 15 miro mol/l) was 74% (37 patients). Serum Hcy was strongly related to BMI (r = 0.43, P = 0.002), cyclosporine trough level (r = 0.44, P = 0.005), and also associated with serum creatinine (r = 0.32, P = 0.028). There were no correlation between serum Hcy and age, duration of transplantation, and intima-media thickness of carotid artery. Serum Hcy in male was more than female (23.5 ± 9 vs 17 ± 6.3, P = 0.034). The frequency of hyperhomocysteinemia in patients receiving Cellcept was more than ones with Imuran (86% vs 44%, P = 0.017). There was no significant difference of serum Hcy level between diabetes and non diabetes. We conclude male obese transplanted patients with higher serum creatinine have higher serum Hcy level, and also Cellcept might increase serum Hcy. However, further studies should be done to confirm these results.

THE EFFECT OF SHORT ISCHEMIC PERIODS ON SUBSEQUENT RAT RENAL ISCHEMIC INJURY

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Using brief episodes of ischemia and reperfusion (IR) prior to a more sustained IR insult – ischemic preconditioning (IPC) – can reduce IR injury of the heart, brain and many other tissues. The purpose of present study was to investigate the effect of 2 min ischemic periods on subsequent rat renal IR injury. Male rat’s renal IR injury was investigated in a right nephrectomized model. For this purpose plasma creatinine (Cr) and urea, creatinine clearance, fractional excretion of sodium and histological injury score (Jablonski score; 0-4) were compared among these groups: IR group (40min of renal ischemia – followed by 24h reperfusion), sham group (no IR) and IPC group (3 times of 2min ischemia – 5min reperfusion before 40min of renal ischemia – followed by 24h reperfusion). Necrosis score was significantly lower in IPC than IR group and cases with Jablonski score = 4 were significantly less frequent in IPC group compared to IR group (11.1% vs. 75%). Plasma Cr and urea, creatinine clearance and fractional excretion of sodium were not significantly different between IPC and IR groups. Cases with plasma urea levels higher than 190 mg/dl and also cases with fractional excretion of sodium beyond 2% were significantly less frequent in IPC group compared to IR group. In conclusion, using three times of “2min ischemia–5min reperfusion” before the injurious ischemic insult can reduce rat renal histological injury and relatively attenuate functional renal injury.
WHO IS APPROPRIATE FOR LUNG DONATION? PREDICTING AND CORRELATED FACTORS

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The aim of the current study is to find the correlated and predicting variables of O2 challenge test, a screening test for finding suitable donors for lung in brain death patients. We used brain death database of the Masih lung transplantation center. We used extracted the result of O2 challenge test along with demographic data, cause of injury, patients’ condition and laboratory finding for analysis. For finding the correlation between test result and other variables we used Pearson correlation coefficient. We used linear regression model to find which of the mentioned variables could predict O2 challenge test results. The mean oxygen-challenge test result was 266.6 ± 85.6. The cause of brain death was trauma (66.7%), vascular aneurism (13.3%) and other causes (20%). The mean age of the patients was 30.3 ± 14.1 years. O2 challenge test results were significantly correlated with age (R=-0.351, p=0.019) and leukocyte count (R=0.315, p=0.042). After entering the variable into the regression model; serum level of Na (B=1.489, p<0.001), age (B= -2.572, p= 0.003) and male gender (47.992, p = 0.043) were significant predictors of O2 challenge test results (R2 = 0.947, p<0.001). Our results showed that higher serum level of Na is a predictor of a better O2 challenge test results. Male gender and younger age were also predictors of better result. The cause of brain death and a history of shock did not predict the test result.

ANXIETY AND DEPRESSION AMONG RENAL TRANSPLANT RECIPIENTS AND OTHER CHRONIC CONDITIONS

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Although subjects with renal transplant are a high-risk group for mental distress, few studies have compared them with patients with different chronic conditions with respect to mental health. The purpose of the present study was to compare the symptoms of anxiety and depression among subjects with renal transplant in comparison to the sufferers of other chronic conditions and healthy subjects. In this cross-sectional study, we selected patients with one of the following five chronic medical conditions: renal transplantation (n=383), chronic hemodialysis (n=68), coronary artery disease (CAD) (n=675), rheumatoid conditions (rheumatoid arthritis, osteoarthritis, and systemic lupus erythematosus, ankylosing spondylitis) (n=666), and viral hepatitis (n=80). The subjects comprised of 1872 patients and a subgroup of 362 healthy persons. Demographic data and symptoms of anxiety and depression (Hospital Anxiety and Depression Scale; HADS) were registered. Anxiety and depression were compared in all the groups using the ANOVA test. Chronic conditions were divided into several homogenous groups via the Turkey test. Renal transplant recipients reported intermediate levels of anxiety and depression, while chronic viral hepatitis, chronic hemodialysis, and rheumatologic patients had the highest anxiety levels, and the chronic hemodialysis patients had the highest levels of depression. Age showed significant correlations with the HADS Depression score in renal transplant recipients similar to the rheumatologic and hemodialysis patients. In conclusion, renal transplantation recipients require a psychological consideration with a medium importance; as different chronic diseases are dissimilar in terms of anxiety and depression.
P-23
MODIFICATION IN ORTHOTOPIC CARDIAC TRANSPLANTATION


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Total orthotopic and bicaval cardiac transplantation techniques were developed as an alternative to standard technique. We modified the bicaval technique by plicating the left atrium in our clinic. In three patients that have undergone cardiac transplantation, we decreased the size of left atrium by plicating left atrial posterior wall between left and right pulmonary veins. A smooth surface was maintained by our suture technique. Right atrial anastomosis was performed by using bicaval technique. We performed echocardiography in the day of discharge. In these patients the diameter of left atrium was 32.5x50.5 mm, the left ventricle ejection fraction was 51-62% and there was no associated mitral valve insufficiency. In the described technique we believe that a more anatomical and physiological left atrium is created. Therefore we expect a better cardiac performance.

P-24
ABO INCOMPATIBLE HEART TRANSPLANTATION

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Shortage of donor has pushed the transplantation centers to change the selection criteria of donors especially for pediatric recipients. Clinical studies in ABO incompatible heart transplantation are among the most important advances in this regard. All the reported cases of ABO incompatible heart transplantation are infants and young children and as far as we know this is the first report of a 14 year old patient undergoing this procedure. The paper presents the first ABO incompatible heart transplantation in Iran with 18 month follow up. The perfusion strategy and induction therapy are described. The literature review of published articles relating this topic is provided. All the cares and drug regimens used for this case was as routine. She experienced two rejection episodes treated with corticosteroid in the first and Anti-Thymocyte Globulin (ATG) in the second episode. She is now doing well and the Echo findings are excellent (EF=55%). The review of literature provided stresses the differences between our experience and the reported cases. The surprising therapeutic effect of ATG is discussed as well. ABO incompatible heart transplantation proved to be quite safe in infants and young children may be safely used in selected non-pediatric cases. The immunosuppressive regimen in these cases should not necessarily be changed but rejection surveillance and treatment needs special considerations.
P-25
BENTHALL PROCEDURE FOR THE TREATMENT OF AORTIC DISSECTION AFTER CARDIAC TRANSPLANTATION: A CASE REPORT

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There is scarce data in the literature about aortic dissection in heart transplant recipients and successful repair is even less common. We hereby report a case of a 47-year-old male patient who suffered from type A aortic dissection 5 months after the cardiac transplantation. The situation was incidentally diagnosed in the routine follow-up of the patient. He was treated with a Benthall procedure. On the follow-up he was in asymptomatic with non – pathologic echocardiography and myocardial biopsy 1 year after the transplantation and 7 months after the Benthall operation.

P-26
INFECTIOUS COMPLICATIONS AMONG HEART TRANSPLANT PATIENTS

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Infection is an important factor of morbidity and mortality after heart transplantation (HTx). We aimed to investigate the infectious complications and associated factors in heart transplant recipients. All patients that underwent HTx at Baskent University Hospital from March 2004 to January 2008 have been included in the study. The patients’ data was retrospectively reviewed from their charts. Their post transplantation infectious complications were evaluated in regards to time of onset and causative agents. There were 19 patients undergoing HTx. Fourteen patients (73.7%) were male. Their mean age at the time of transplantations was 30.5 (range: 12-55) years. The indications for HTx included 10 (27.0%) dilated cardiomyopathy, 4 (10.8%) ischemic dilated cardiomyopathy, 3 (8.1%) congenital heart diseases, 1 (2.7%) restrictive cardiomyopathy, and 1 (2.7%) familial cardiomyopathy. There were 30 episodes of infection in 14 of the patients (number of episodes were 1 in 5 patients, 2 in 6 patients; and the remaining 3 patients had 3, 4, and 6 episodes). The onset times of the infections after the transplantation were less than a month for 11 (36.7%), from 1 to 6 months for 15 (50%), and more than 6 months in 4 (13.3%) of them. Causative agents were identified in 60% of the bacterial infections, and in all of the urinary tract infections. Bacterial infections were more common then viral infections after HTx. Bloodstream infections were dominant during the first month after the HTx, and pneumonia was the overall most common infection.
**P-27**

**COMPARISON OF STANDARD AND BICAVAL TECHNIQUES IN ORTHOTOPIC CARDIAC TRANSPLANTATION**


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Cardiac transplantation, as the technique was described by Lower and Shumway, has become the standard method for treating end-stage heart disease until the beginning of the decade. In this technique establishment of venous communication was simplified with atrial cuffs. However, the losses of atrial anatomy, high incidence of mitral and tricuspid valve regurgitation and atrial arrhythmias have allowed an alternative technique, the bicaval technique, to gain popularity. Twelve orthotopic cardiac transplantations with standard technique (group A) and 10 transplantations with bicaval technique (group B) were enrolled in this study to evaluate the effect of surgical technique on alteration in the dimensions of atriums and the competence of the atrioventricular valves. All patients were assessed with transthoracic echocardiography on a regular basis. The data obtained in the first and sixth months after transplantation were evaluated in this study. The mean right atrial dimension was larger in group A. The incidence of mitral and tricuspid valve regurgitation did not show any difference between the two groups. There was no difference regarding the progression of atrial dilation or incidence of atrial arrhythmias. Although there was no statistically significant difference between the two groups, bicaval technique is now preferred by restoring near normal anatomic reconstruction.

**P-28**

**INFLUENCE OF DIFFERENT IMPLANTATION TECHNIQUES ON TRICUSPID VALVE COMPETENCE AFTER ORTHOTOPIC HEART TRANSPLANTATION**

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About a decade after the introduction of the bicaval heart transplantation technique a reduction of tricuspid valve incompetence compared to the standard technique by Lower and Shumway is still discussed controversially. A total of 72 patients were transplanted at our institution between 2000 and 2008, and divided into two groups based on their operative techniques. The patients in both groups were followed up as outpatients and were examined with transthoracic echocardiography. Patients in both groups were similar in demographic data. Trans-thoracic echocardiography showed a reduction of tricuspid valve regurgitation in follow up, but not with statistical significance. The left atrium was significantly enlarged in the standard group. This study showed acceptable survival rates for both groups. The reduction of tricuspid valve regurgitation in the bicaval group might have important impact on the long term preservation of cardiac function. Total orthotopic heart transplantation with bicaval anastomosis should be preferred for heart transplantation.
URETERAL COMPLICATIONS IN RENAL TRANSPLANTATION BASED ON ANASTOMOTIC DIAMETER

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In this study we report the ureteral complication based on urologist’s experience for ureteral reimplantation with two different spatulation lengths. From September 2005 to June 2008, 170 kidney transplant recipients studied and their ureteral complications were analysed. In all patients the ureter from the kidney graft was extravesically implanted described by Lich-Gregoir with using double J stent at least for 6 weeks. Patients divided in two groups 70 recipients were in group 1 and ureteral spatulation length in this group was between 5-8mm in group 2 (100 recipients) ureteral spatulation was 9mm or more (9-14mm) during follow-up ureteral complications evaluated and compared between two groups. Before and after removing double J stent (6 weeks later) ureteral complication’s that needed surgical intervention (open or percutaneous) occurred in 16/70 recipients in group 1 (20.3%) and in 11/100 recipients in group 2 (11%). Urine leakage and ureteral obstruction were the most frequent. The time of occurrence was either short (<6 weeks) or late (> 6 weeks). Most cases needed percutaneous nephrostomy (PCN) and some of them managed later by open surgery, no deaths related to any of the urological complication were reported during the follow-up (mean time 13 months). In conclusion, to reduce ureteral complications in kidney transplant recipients we recommend enough ureteral spatulation length (9 mm or more).

IMPACT OF HEPATITIS C VIRUS INFECTION ON LONG-TERM CLINICAL OUTCOME IN LIVING DONOR TRANSPLANTATION

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Chronic infection with hepatitis C virus (HCV) is a continuing global health problem. The prevalence of HCV is considerably higher in hemodialysis and renal transplant patients, as compared to the general population. Immunosuppressive therapy can result in an increased load of HCV viremia leading to diminish the long-term survival of patient and allograft. We retrospectively reviewed the records of our two center databases to determine the influence of chronic HCV infection on patient and allograft survival rates in living kidney allograft recipients. This case-control study involved 3083 kidney recipients (244 anti-HCV positive, 2839 hepatitis negative), transplanted between 1985 and 2008. Mean dosage and type of initial and maintenance immunosuppressive drugs in research subjects and in controls were not significantly different. Mean ages of research subjects and controls at the time of transplantation were 35.1 (6-67; SD: 13) and 36.5 (1-83; SD: 15.6) years (P=0.16), respectively. The gender distribution was the same in both groups (P=0.08). No significant differences were noted in the age and sex of the donors, donor source, recipient’s body mass index (BMI), causes of ESRD, warm and cold ischemic times. The occurrence of renal allograft loss in HCV positive recipients was higher than HCV negative recipients (54.9% versus 30.9%; P=0.000). Furthermore, 15.2% (n=37) of cases and 10.7% (n=305) of controls died in follow up period (P=0.000). In conclusion, patient and graft survival in chronic hepatitis C infected recipients were encouraging. Therefore, HCV Ab positive patients should not emphatically refuse for renal transplantation.
CONVERSION TO SIROLIMUS FOR CHRONIC ALLOGRAFT NEPHROPATHY AND CALCINEURIN INHIBITOR TOXICITY: EFFECT OF BASELINE SERUM CREATININE LEVEL

**P-31**

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Unlike calcineurin inhibitors, sirolimus is devoid of significant nephrotoxicity. We aimed to report our experience with conversion to sirolimus in patients with chronic allograft nephropathy at our transplant center. Since 1985, 1385 renal transplantation were performed at our center. Among them, calcineurin inhibitor was converted to sirolimus in 88 patients because of biopsy proven chronic allograft nephropathy, calcineurin inhibitor toxicity, or other calcineurin inhibitor adverse effects, which were analyzed retrospectively. Patients were divided into 2 groups: group 1 (conversion to sirolimus at creatinine levels < 2 mg/dL) and group 2 (conversion to sirolimus at creatinine levels > 2 mg/dL). Eighty-eight renal transplant patients (64 men, 24 women; mean age, 35.9 ± 9.9 years; age range, 21-59 years) with biopsy proven chronic allograft nephropathy, calcineurin inhibitor toxicity, calcineurin inhibitor adverse effects, or persistence of malignancy were converted to sirolimus. At the time of conversion, the mean duration of transplant was 48±15 months (range, 4-296 months). Before conversion, immunosuppressive treatment had consisted of a calcineurin inhibitor + prednisolone + mycophenolate mofetil. After conversion, the calcineurin inhibitor was stopped and sirolimus was started. In group 2, 49 patients underwent conversion; the mean serum creatinine level increased to 3.2±1.4 mg/dL. In this group, 17 patients rejected the transplant. In group 1, 40 patients underwent conversion; the mean serum creatinine level fell to 1.4±0.5 mg/dL for only 3 patients. In conclusion; calcineurin inhibitor toxicity can lead to chronic allograft nephropathy. Stabilizing kidney function can be done in patients with a low baseline serum creatinine level. Late conversion to sirolimus may result in graft failure. If therapy without a calcineurin inhibitor is considered, it should be initiated before the serum creatinine level rises to 2 mg/dL.

ASSOCIATION OF SERUM LEPTIN WITH VARIOUS PARAMETERS OF BONE ACTIVITY IN RENAL TRANSPLANTED PATIENTS

**P-32**

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Leptin is a small peptide hormone that is mainly but not exclusively, Produced in adipose tissue. Leptin plays an important role in regulating appetite and energy expenditure and also functions in the neuroendocrine, hematopoietic, and immune systems, among others. Leptin may be involved in modulating bone mineralization. The relationship between leptin and bone mineral density and bone biochemical parameters in not clear. This study examined the relationship between some bone biochemical parameters (such as Alkaline phosphatase, phosphorus, parathyroid hormone and calcium) and serum leptin level in renal transplant recipients. we studied 72 renal transplant recipients (47 men and 25 women; age 13 to 61 years, 11 diabetic and 61 non-diabetic, mean body mass index 24.2±3.9) observed on Shahrekord’s Hajar hospital. Serum calcium, phosphorus and alkaline phosphatase and also intact serum PTH and serum leptin were measured too. In this study a significant difference of serum leptin between males and females with more values in female was seen. In all patients a significant positive correlation of serum leptin level with serum iPTH was found. There was no relationship between serum leptin level with alkaline phosphatase, phosphorus, calcium, BMI, age and creatinine clearance. A negative relationship was found between serum leptin and duration of posttransplant followup. These data suggest that serum leptin affects bone metabolism in renal transplant recipients.
**P-33**

**POSTTRANSPLANTATION POLYMYOSITIS**

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Renal transplantation is a unique renal replacement therapy because it is the most physiologic form of treatment in end stage renal failure. Case report: A 37 yrs old male with End stage renal failure due to hypertension on regular hemodialysis undergone kidney transplantation from living unrelated donor. His immunosuppressive regimen was cyclosporine, azathioprine and prednisolon. He was discharged 2 weeks after operation with good condition and his serum creatinin was 1.4mg/dl. 3 months after transplantation he returned to hospital with muscle weakness and reduced urine volume. He was afebrile. His muscle forces were reduced. His serum creatinin was 3mg/dL. His muscle enzymes were increased several hundred time. Because of oliguria and hyperkalemia dialysis was begun and methylprednisolone pulse was administered intravenously, Azathioprine was replaced by mycophenolate mofetil. His EMG study showed neuromyogenic changes as in myopathy and his muscle biopsy revealed focal fiber necrosis, regenerating fibers and interstitial mononuclear cells infiltration as in inflammatory myopathy. The patient did not receive any drugs which can induce myopathy or myositis. FANA, Anti-dsDNA and ANCA, CMV Ab, HBsAg, HCVAb and HIVAb were negative. Complement level was normal. ESR was 73mm/hr. IVIG was administered. The patient’s muscle weakness was advanced leading to respiratory failure and was unfortunately died. In conclusion, since both polymyositis was not reported as renal transplantation and also tests of other causes of polymyositis were negative therefore we suggest this is a rare case of solid organ transplantation or a rare condition of coincidence of two unrelated diseases.

**P-34**

**PROTEINURIA IS REDUCED BY INHIBITION OF INDUCIBLE NITRIC OXIDE SYNTHASE IN RAT RENAL ISCHEMIA/REPERFUSION INJURY**

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Ischemia/reperfusion (IR)-induced nephrotoxicity is associated with proteinuria. There are also some reports about the involvement of iNOS (inducible form of nitric oxide synthase) in proteinuria associated with renal disease. The present study was designed to investigate the effect of L-Nil (N6-(1-Iminoethyl)-L- lysine hydrochloride), a selective inhibitor of iNOS, in prevention of renal proteinuria in IR injury. Ischemia was induced by 40-min clamping of the renal arteries followed by 6 h reperfusion. Rats were administered either L-Nil (3 mg/kg i.v. bolus followed by infusion of 1 mg/kg/h) or saline. To monitor glomerular 7:29 AM tubular functional changes before and after treatment, BUN, plasma creatinine Cr) and urinary NAG (N-Acetyl-β-D-glucosaminidase) activity were measured. Total protein, albumin, low and high molecular weight protein excretion rates were determined by sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE) of urine samples. Kidney ultrastructure was examined through a transmission electron microscope (TEM). Renal IR resulted in significant low and high molecular weight proteinuria. L-Nil significantly ameliorates the IR-induced increases in total protein, albumin and Î¼1-microglobulin excretion. TEM showed loss of microvilli of the proximal tubule cells, injured mitochondria, foamy changes in the structure of nuclear and cytoplasm in IR group but pretreatment with L-Nil reduced IR-mediated renal ultrastructural changes & tubular proteinuria. In conclusion, iNOS is involved in IR-induced tubular proteinuria.
INCISIONAL HERNIA AFTER KIDNEY TRANSPLANTATION: A REVIEW OF 2430 RECIPIENTS

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Kidney recipients are susceptible to incisional hernia which requires proper management and treatment. The purpose of this study was to determine the incidence and the risk factors for surgical wound complications (e.g., infections, hernias) in kidney recipients. From September 1995 to June 2006, 2430 patients had undergone kidney transplantation in our transplant center. Incisional hernia was seen in 43 (1.7%) patients, 20 male and 23 female. The following data were collected from their medical records: age, gender, Body Mass Index (BMI), causes of end-stage renal disease, immunosuppressive regimen, patient and graft outcome, surgical complications and treatment methods. The mean age and BMI were 49.7±12.2 years and 24.5±4.9 Kg/m², respectively. The most common cause of ESRD was hypertension, followed by diabetes mellitus. Immunosuppression in all patients was cyclosporine based. The median follow up and interval between kidney transplantation and developing of incisional hernia were 2 (1 to 125) months and 33 (1 to 3700) days, respectively. Only 2 cases had wound infections (4.7%). Although incisional hernia was small in 35 recipients, repair was done in 8 cases using propylene mesh due to the large size of hernia. Only 3 patients had suture line dehiscences. Two patients died with a functioning allograft and no graft loss was occurred. Conclusion: Our study showed that the incisional hernia is an uncommon curable complication among renal allograft recipients.

LIMITED-DOSE DACLIZUMAB IN LIVE UNRELATED DONOR RENAL TRANSPLANTATION

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In this prospective, randomized, single-center study, with regard to the high cost of monoclonal antibodies (MAb), we intentionally show the efficacy and safety of only one dose induction of Daclizumab (DZB) [Zanapax, Hoffman LaRoche, humanized anti-interleukin-2 receptor (IL-2R) MAb] among adult recipients of live unrelated donor graft. Eligible patients got induction with only one dose of DZB (1 mg/kg), intentionally just the day before renal transplantation surgery. This group was compared with those patients who did not get induction with any MAb. The primary outcome measure was the incidence of acute rejection. Secondary outcomes included: cost, changes in serum creatinine level (SCr), primary non function (PNF), and delayed graft function. One hundred patients among 141 renal transplant recipients were selected and they completed the 6-month follow-up. Cyclosporine micro emulsion (CsA), prednisolone, azathioprine, mycophenolate mophetile (MMF), were the drugs used by all of these patients. Mean SCr level at time of discharge was originally lower in the limited-dose DZB group than the rest of population study group who did not received DZB, (0.75mg/dl vs. 1.27mg/dl, respectively). By 1, 2, 6, months, mean SCr values were nearly equal in both group. The incidence of acute rejection was also lower in limited-dose DZB group (22.5% vs. 40%) (P value 0.005). The incidence of delayed graft function was surprisingly lower in limited-dose DZB group in comparison with other group who did not received DZB (7.6% vs. 12.2%, respectively). The cost difference between the standard dose of DZB (1mg/kg, 5 dose, before and after renal transplantation), and limited-dose of DZB was strikingly high (approximately, 2500 us $ vs. 1000 us$, respectively). Primary non function (PNF) occurred only in one patient in DZB group (2.5%), but in control group PNF occurred in 3 patients (5%). One case of Kaposi’s sarcoma confined to skin had been detected in DZB group during the first 6 months post transplantation. This study suggests that a limited-dose DZB regimen may be efficacious and less costly alternatives to the standard-dose of DZB for antibody induction therapy for renal transplantation to prevent acute rejection.
P-37
SIROLIMUS RELATED SEVERE LYMPEDEMA IN RENAL TRANSPLANT PATIENT

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Adverse events related to sirolimus (SRL) include hyperlipidemia, diarrhea, and thrombocytopenia, poor wound healing and increased incidence of lymphocele. Lymphedema has been reported with SRL in few cases; it resolved after discontinuation of SRL. We reported a case of early setting lymphedema related to use of SRL in a male cadaveric renal transplant (CRT) patient. A 44-year-old man who received a CRT and his induction regimen consisted of CyA, SRL, and corticosteroids. One week after a CRT, the patient developed swelling of his lower extremities with a significant swelling and redness of his left arm (AV fistula site) which was significantly worse than the right side (CRT was placed in the right lower quadrant). The swelling of the lower extremities, right breast and upper extremity became worse even though his renal function in normal range and no proteinuria and the left axillary lymphadenopathy was found at 6 week after CRT. Extensive diagnostic investigations could not reveal signs of infection. The venous Doppler ultrasonography, lymphoscintigraphy and the thyroid hormones were normal and the family history was negative for familial lymphedema. After SRL discontinuation the generalized lymphedema started to improve and three months later all the symptoms had disappeared. Recognizing the association with SRL and lymphedema may lead to early discontinuation of SRL, which may prevent permanent disfigurement. It may also prevent unnecessary investigations. The mechanisms of this phenomenon are not clear. We hypothesize that increased lymph flow along with disrupted lymphatics in the affected extremities may explain this complication of SRL. In addition to these, lymphedema of the limbs in RT recipients under SRL, especially if on the same side as the hemodialysis access should warn the transplant physician to rapidly reduce or withdraw SRL before the occurrence of complete obstruction. Further studies are necessary to confirm our findings.

P-38
IMPACT OF GENDER ON ACCESS TO THE RENAL TRANSPLANTATION

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Sexual discrimination in benefiting from medical treatments is a worldwide spread problem. Kidney transplantation, as the best known treatment for end stage renal disease patients, is not an exception. Regarding unique kidney donation patterns and different family styles in the Iran, studying this problem in Iran seemed justifiable and necessary. The data of age, gender, nationality, donor type and waiting time before transplantation of 1426 recipients who underwent transplantation in Mashad University of Medical Sciences from 1990 to 2003, was analysed. Recipients were categorised in three groups based on donation patterns including receiving kidney from live unrelated, live related and cadaver donors. The number of patients in Family group was 232 (67.24% male, 32.75% female). Comparison of waiting time of male and female recipients in this group did not show significant difference. In almost all sub-categories, females were less likely than males to be recipients. Furthermore, waiting time for females was longer than males when receiving kidney from sisters and children. For spousal donations, males were recipient more frequently than females while female recipients waited less than their male counterparts to receive the kidney. Overall, though males comprise the majority of recipients, the waiting time does not show significant difference between genders, so this condition seems to be a consequence of entrance of fewer females into this category. This maybe because females have less chance to find a potential donor in the family, which can be attributed to their lower socio-economic situation.
P-39
EVALUATION OF THE MEAN URINARY OUTPUT WITHIN 24 HRS OF RENAL TRANSPLANTATION BY DIFFERENT DIURESIS METHODS

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Many studies are done to decrease the risk of renal dysfunction after kidney transplantation. The commonly used practices aimed at preserving this transplanted organ are based on many studies and experiences. 140 patients are divided into four 35 groups. Group 1 received Furosemid and Mannitol (Control Group); Group 2 received renal dose dopamine (Dopamine Group); Group 3 received aminophylline (Aminophylline Group); Group 4 received hyperosmolar solution as force diuresis (Force Diuresis Group). Renal function indices (Urine Volume, Creatinine Clearance, Urine Sodium) evaluated post op. All data analyzed statistically by (ANOVA TEST, PEARSON CORRELATION). Increase in urine output, creatinine clearance, and decrease in serum creatinine were significantly different in the second and fourth groups (p<0.05, p<0.01 respectively). In conclusion, dopamine and Force diuresis provide acceptable and better renal function after renal transplantation in comparison with simple hydration and aminophylline.

P-40
INCREASED CAROTID INTIMA MEDIA THICKNESS IN CHILDREN AND YOUNG ADULTS WITH RENAL TRANSPLANTATION

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Cardiovascular disease is a main cause of morbidity and mortality among children and young adults after renal transplantation. The aim of study was to investigate the carotid intima media thickness (cIMT) and it’s relation to risk factors for early arteriopathy in renal transplant patients. Twenty six renal transplant patients (14 girls, 12 boys) with stable graft function (eGFR> 40 ml/1.73/m2) and 26 age and sex matched healthy controls were enrolled in this study. The measurement of cIMT was performed with high resolution B mode ultrasonography in multiple projections. The results were correlated with clinical and paraclinical parameters including: age, sex, BMI, blood pressure, GFR, duration of dialysis, Duration of CKD, Ca×P product, cumulative dose of Ca based P binder and calcitriol, lipid profile, uric acid, cyclosporine level, and rejection episodes. The mean age of patients was 17 ±3.7 years. The mean time from CKD to transplantation was 33.5 ± 24.2 months. The average eGFR at the time of study was 87.3± 34.8 ml/min/1.73 m2. Compared with control subjects, transplant patients had significantly higher cIMT. (P<0.001). Among several risk factors, positive correlation was found between cIMT and age, duration of dialysis, and cumulative dose of calcitriol (P< 0.02, P < 0.04, P< 0.02), respectively. In conclusion, subclinical atherosclerosis is present in young transplant recipients. Non invasive monitoring of cIMT in renal transplant patients for detection of early vascular lesions would be of outmost value in preventing cardiovascular disease.
The objective of this study is to evaluate the incidence, diagnosis, management, surgical technique, outcome and risk factors of ureteric urologic complications after kidney transplantation. Between 1989-2007, among 1000 kidney transplanted patients, 200 patients were successfully completely followed up for 1-13 years, by clinical examination, graft sonographic study, biochemical and if indicated isotope scanning of the renal graft (DTPA scanning). All transplanted ureters were stented and received the same immunosuppressive protocol as routine. Those who proved to have ureteral complications were first referred for endourologic intervention, and if failed referred for surgical repair. This study didn’t included extra ureteral obstructive causes, like lymphocele or other pelvic collections. 14 among 200 patients (7%), were developed ureteric complications. M/F ratio = 10/4. Ureteral stenosis (6), ureteral fistulae (5) and ureteral obstruction (3). All of them initially treated by percutaneous nephrostomy (PNS) and if were possible antegrade JJ stenting. Those who failed conservative approach, were referred for surgical intervention (10 patients = 3 ureter obstruction + 4 stenosis+ 3 fistulae). (3) cases managed by Boari’s flap, (3) by ureteroureterostomy with native ureter, (3) by pyeloureterostomy with native ureter and (1) by ureteroneocystostomy. One case failed to respond (ureteroureterostomy) and was managed with proper outcome by Boari’s flap. Among 14 patients, 10 were diabetics, 12 had previous history of CMV infection and 5 had acute rejection episodes. In conclusion, post-transplantation ureteral complications are easily diagnosed and can conservatively manage by expert radiologists. Those with prolonged DM, previous acute rejections and / or CMV infection, are better to be referred to surgical repair using native ureters.
**P-43**

**ROLE OF RESISTIVE INDEX MEASUREMENT IN DIAGNOSIS OF ACUTE REJECTION AFTER RENAL TRANSPLANTATION**

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This study was performed to evaluate the role of renal resistive index (RI) in the diagnosis of acute rejection after successful renal transplantation. In a prospective study from Jan. 2006 to Aug. 2007, 101 renal transplantation (mean age of 39 years, 74 male and 25 female) were performed in our center. Resistive index measured in all patients by doppler sonography 3 days, 7 days and at 1, 3, 6 months and at the time of graft dysfunction (increase of more than 1 mg/dl in creatinine level) after operation. All measurements were done by a single sonographist and under the same condition. The normal limit of RI presumed to be less than 0.70. Statistical analysis was done by T-test in SPSS soft-ware computer program. Thirty-three episodes of acute rejection in 27 patients (32%), 10 high blood level of cyclosporine in 8 patients, 5 episodes of ischemic tubular necrosis (ATN) and 3 episodes of renal artery thrombosis detected in case of graft dysfunction in these patients. Mean RI was 0.606 +/- 0.065 (0.45-0.75) in normal graft function group. Mean RI was 0.866 +/- 0.083 (0.69-1.1) in rejection group (p<0.05). In 32 episodes of rejection resistive index were higher than normal (> 0.70) and in one episodes the RI were in normal limit. Normal RI detected in patients with history of another episode of rejection. Mean RI was 0.642 +/- 0.060 (0.56-0.72) (p<0.05) in ATN group. Only one patient with ATN had RI mildly elevated (0.72) and the others had normal RI. Mean RI was 0.822 +/- 0.056 (0.49-0.69) (p<0.05) in high blood cyclosporine level group. None of the patients with high serum level of cyclosporine had elevated RI. Only 2 patients had mild elevation of RI in spite of normal graft function (0.75 and 0.73 ). Both these patients had post transplant diabetes mellitus (PTDM). Resistive index was significantly higher in patients with acute rejection and not elevated in patients with ATN or cyclosporine toxicity after renal transplantation. RI measurement is a non-invasive diagnostic method which provides flow-metric quantitative parameters for the hemodynamic assessment of the renal transplant with a certain sensitivity.

**P-44**

**ROLE OF POLY (ADP-RIBOSE) POLYMERASE ON MICROVASCULAR INJURY AND INFLAMMATION IN RENAL ALLOGRAFT REJECTION AND ITS INFLUENCE ON RENAL GRAFT SURVIVAL**

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The activation of poly (ADP-Ribose) polymerase (PARP) is considered to play an augmenting role in inflammation and cell death. The aims of this study were to investigate the role of PARP in acute rejection (AR) and to assess the influence of PARP on renal survival. The study comprised of 81 cases and 55 of them had AR. Twenty-six cases had no pathology and were used as a control group. PARP and HLA-DR expression of tubules, interstitium, arteries and peritubular capillaries (PTC’s) were studied immunohistochemically and CD68 positive macrophage infiltration of tubules, interstitium, PTC’s and arterial walls were evaluated. The decreasing intensity of PTC HLA-DR (PTC-DR) expression was accepted as the increasing degree of the destruction of PTC’s. AR cases showed higher degrees of tubular, interstitial and vascular PARP and HLA-DR expression compared to control group (p<0.01 for all). PTC-DR expression was lower and PTC-PARP expression was higher in AR cases compared to control group (p<0.001). Increasing of AR grade with the high level of PTC-PARP expression, caused decrease of PTC-DR expression and increase of PTC destruction (p<0.01). Tubular and interstitial HLA-DR expression, interstitial, tubular, vascular and PTC macrophage infiltration showed positive correlation with tubular, interstitial, PTC and vascular PARP expression (p<0.01 for all). In contrast PTC-DR expression showed negative correlation with all these parameters (p<0.01). Severity of PTC destruction with accompanying higher degrees of PARP expression on tubules, interstitium, arteries and PTC’s caused unresponsiveness of steroid therapy (p<0.01) and poor graft outcome (p<0.01). In conclusion increased PARP activation leads to higher degrees of cell death and inflammation that AR cases with high renal PARP expression showed significant PTC destruction and renal inflammation. Therefore we suggest that PARP inhibitor drugs can combine with immunosuppressive therapy in order to control PTC destruction and renal inflammation.
P-45
THE VASCULAR COMPLICATIONS OF THE RENAL TRANSPLANT
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The aim of this study is to determine factors predisposing to the vascular complications after renal transplant as well as the diagnostic criteria and the therapeutic attitude in front of such a complication. Through a retrospective study about 348 renal transplants cases between June, 1986 and May 2005, the vascular complications was noted in 23 cases (13.8 %) 9 from living and 14 from cadaveric donors : arterial thrombosis in 8 cases, 12 venous thrombosis and 3 arterial stenosis. Relative rate of complications was higher in cadaveric donor group. The vascular thrombosis was confirmed by the Doppler ultrasound in all cases; the treatment was based on heparin with good evolution in 9 cases and a detransplantation in 11 cases. The arterial stenosis was diagnosed by the Doppler ultrasound or by the arteriography. The treatment was a surgical resumption in a case and renal angioplasty in other case with 1 failure and 1 success. In conclusion, vascular complication represents the most severe technical complications following renal transplantation, associated with graft loss and mortality. Regarding the donor type, better results are obtained using living donors.

P-46
BK VIRUS NEPHROPATHY IN TWO PEDIATRIC RENAL TRANSPLANT PATIENTS
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Viral nephropathies, particularly those caused by polyomaviruses of the BK-virus strain are serious complications following renal transplantation. To date, there is no firmly established treatment and between 30-65% of patients with this diagnosis are reported to lose their graft within one year of diagnosis. A number of antiviral agents have been tried to help to reduce BK viral replication. However, no antiviral drug with proven efficacy against the BK virus has been licensed yet. Though cidofovir and leflunamide can be used together with a reduction in immunosuppression, the clinical effectiveness of these treatment strategies is quite questionable. Here we present two patients with polyoma virus infection. Both of them have received renal transplantation from cadaveric donors. Although their graft function was well immediately after the transplantation, their serum creatinine level found to be increased during the 3rd months of follow-up. Renal biopsy and serologic studies revealed findings consistent with polyoma virus infection. Immunosuppressive treatment was reduced in both patients and they were treated with cidofovir, leflunamide and cyprofloksasin. However, patient’s renal functions did not respond to any treatment strategies and they both have lost their graft during follow-up. After more than a decade, BK virus nephropathy remains a significant post transplant challenge. However, still there is a lack of adequate randomized controlled studies and no consensus view regarding appropriate antiviral therapy. Both cidofovir and leflunamide seem to have no effect on the prognosis of the BK nephropathy in our cases. Thus, there is an urgent need to randomized and controlled studies with a higher number of patients.
P-47
HIGH BODY MASS INDEX AND OBESITY ARE NOT RISK FACTORS FOR KIDNEY GRAFT AND PATIENT OUTCOME IN PEDIATRIC RENAL TRANSPLANTATION

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High body mass constitutes a significant risk factor for morbidity and mortality in the general population, but it has been associated with an increased survival among dialysis patients. Despite reduction of weight gain with the new immunosuppressive regimes, obesity is more common in the post transplant period and its effects on adult renal transplant outcomes are controversial. The aim of our present work was to investigate the impact of pretransplant obesity and post transplant weight gain on patient and graft outcomes in childhood. In this cross sectional study sixty five consecutive renal transplant (Tx) recipients (51 boys and 24 girls) were included. Their mean age was 10.5 years and the mean follow-up was 4 years. Basal immunosuppression was steroids, cyclosporine (CsA) and mycophenolatemofetil (MMF) in all patients. At the time of transplantation mean of body mass index (BMI) was 17.2 (SD: 3.2) kg/m², namely, BMI <5th percentile in 23%; 5 to 85th percentile in 55.3% and >85th percentile in 21.7%; while at the time of our study mean BMI was 22 (SD: 5.2) kg/m², BMI <5th percentile in 8.1% and >85th percentile were 34.5%. Pretransplant obesity (BMI>85th percentile) that was more frequent in younger age (p=0.024), was associated with chronic continues decrease of GFR (p=0.01), hypertension (p=0.007), long term post Tx high weight gain (p=0.035) and pretransplant hyperlipidemia; but was not associated with gender, pre transplant hypertension, dialysis history, and acute rejection. Obesity was more common in post Tx period and it was less frequent in prolonged graft duration (p=0.01) but was not associated with acute rejection and chronic continuous decrease of GFR, hyperlipidemia, proteinuria and hypertension. In conclusion, univariate and multivariate analysis showed that pretransplant obesity had some effects on long term graft outcome; whereas post transplant weight gain was not a risk factor for graft or patient survival in our experience.

P-48
USING URETERAL STENTS IN KIDNEY TRANSPLANTATION

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Nowadays in most of renal transplantation (RTX) centers to prevent the urinary leakage and to facilitate healing of the anastomotic site of donor kidney ureter to recipient bladder, the DJ catheter is used as a ureteral stent. In this article we have evaluated the problems which are due to usage of ureteral stent after RTX. Since March 1989 until March 2007, 1300 RT were performed in our center by a fixed surgical team. Politano – ledbetter was the technique of ureteral anastomosis in the first 55 cases. The remainder of patients the U.V anastomosis was done by extravasical technique and we used Dj – Stent for these ureters. In 35% of female and 32% of male patients we used a short Dj stent (16 cm) and fixed it with a chronic suture to bladder mucosa. For others patients we didn’t shorten the Dj – stent or fix it to bladder mucosa. Duration of remaining Dj – stent in the anastomosis ureter varied from 5 to 6 weeks. In 16 patients upward migration of Dj – stent occurred that in 15 cases and we removed the stent by ureteroscope and in one patient we used percutaneous nephrostomy for removing stent. In 85 recipient patients we encountered downward migration and entrance of ureteral DJ stent to the urethra. Upward or downward migration of the stent occurred in recipient’s whose stent was not fixed (P<0.01) or the length of stent was longer than 16 cm (P < 0.01). Encrustation occurred around Dj – stent in 45 patients and this didn’t allow stent to be drawn out, therefore we drew out the stent by endoscopic procedures in 11 patients. In conclusion, displacement of the ureteral DJ stent especially upward migration and encrustation around the stent are two serious complications after RTX. To prevent migration we advise to select a short length stent and to fix it to the bladder mucosa. Finding the causes of encrustation and ways to prevent it needs further investigation.
**P-49**

**CYTOMEGALOVIRUS INDUCED ADRENAL INSUFFICIENCY**

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Cytomegalovirus (CMV) is the most important pathogen that affecting solid-organ transplant recipients. CMV infection can affect different organ system. There are frequent reports of CMV-induced adrenal insufficiency in HIV infection. Here we report a case of CMV-induced adrenal insufficiency in a renal transplant recipient. A 24-year-old women received living unrelated kidney transplantation. Immunosuppressive regimen was: cyclosporine, mycophenolate mofetil, and corticosteroid. Both donor and recipient had a positive anti-CMV IgG, and Negative IgM. Serum creatinine (Scr) level reached to 1.2 mg/dl at the 18-day after transplantation. On the 22-day Scr rose up to 3 mg/d and she received a course of anti-thymocyte globuline therapy and serum creatinin level returned to 1.5 mg/dl at the 28-day. At sixth week after transplantation again Scr raised up to 2.2 mg/dl and serologic study revealed a positive anti-CMV IgM. Intravenous gancyclovir was started. At the beginning of fourth month of transplantation gradually she started complaining weakness and anorexia. Physical examination revealed a low blood pressure: 80/60 mm/Hg. At this time she was receiving 5 mg/day prednisolone. Laboratory investigation revealed: white blood cell count; 6900/µl, hemoglobin: 12 mg/dl, Scr; 1.5 mg/dl. Brown pigmentation of her face was visible. Prednisolone was changed to 15 mg/day oral hydrocortisone and continued for 2 weeks. Serum free cortisol was measure while she had taken hydrocortisone at the 8 am of the day before. Serum free cortisol was less than 5 µg/dl. We assessed the adrenal reserve capacity by injecting 1 mg tetracosactide and measuring the serum cortisol levels at 12 and 24 hours. In both instances it was below 18 µg/dl. With the diagnosis of primary adrenal insufficiency prednisolone level rose up to 10 mg/day and her symptoms improved. As far as we know this is the first proposed case of CMV induced adrenal insufficiency in renal transplant recipient. Although they receive corticosteroid, but in stressful condition the underlying adrenal insufficiency could be uncovered.

**P-50**

**ATTITUDES AND WILLINGNESS OF SHAHED UNIVERSITY MEDICAL STUDENTS TOWARD ORGAN TRANSPLANTATION**

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Transplantation is a successful procedure in prolonging the lives of people suffering from debilitating diseases. The purpose of this study was to assess medical students’ attitudes toward organ donation and their willingness to donate their own organs or those of a deceased relative. The study population consisted of 262 medical students from all 7 years of medical course, with mean value of age 22.1 ± 2.5 years who were surveyed using a reliable questionnaire included attitude and willingness measures. All data analyses were carried out using the SPSS, Chi-square and ANOVA tests. The medical students had highly positive attitudes toward organ donation (mean score 4.31 ± 0.46) and a great willingness to donate tissues and organs (85% of total students). Participants were more willing to donate their own organs than those of a deceased relative (85% vs 49.2%) and in order to helping others than the development of science (91.2% vs. 8.8%). Students were willing to donate all organs and tissues, but the most willingness was blood (89.3%) and kidney (84%) donation. There was no correlation between age, gender, level of education and attitude toward organ donation. In conclusion, these findings necessitate an organized education program of medical students in all aspects of organ and tissue donation.
P-51
CYTOMEGALOVIRUS INFECTIONS IN SOLID ORGAN TRANSPLANT RECIPIENTS

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Cytomegalovirus (CMV) has been recognized as one of the most important opportunistic pathogens in transplant recipients. The aim of this study is to describe the patient characteristics, clinical presentations, the diagnostic tools, therapeutic regimens and outcomes of the CMV infections in solid organ recipients. Medical records of patients were evaluated retrospectively. Twenty one CMV infection episodes in 20 solid organ recipients who were followed with the diagnosis of CMV infection during the period 1997-2007 in our transplantation center were included. Fourteen of the patients were male and 6 were female. One of the 14 male patients and 2 of the 6 female patients were liver recipients and the remaining 17 were kidney recipients. Fourteen episodes in 13 patients were CMV gastritis and/or colitis; five were CMV syndrome without end-organ disease. Two end organ involvements were seen in the remaining patient; CMV pneumonia and colitis. Histopathological diagnosis was available for 15 of the episodes along with CMV PCR or CMV pp65 antigenemia. The remaining five episodes were diagnosed with CMV PCR or CMV pp65 antigenemia. All patients were treated with intravenous gancyclovir for 2-4 weeks. All patients responded to therapy and survived. Major advances have been achieved regarding the management of CMV infection and disease. These advances have been made possible through the development of new techniques for the detection of the virus. CMV pp65 antigenemia testing or CMV PCR is useful for surveillance of active infection. As a result of prevention and treatment of CMV infection, both the direct and indirect effects secondary to CMV replication have led to improved outcomes.

P-52
EVALUATING ONE-YEAR SURVIVAL OF CADAVERIC KIDNEY GRAFTS AMONG GRAFT RECIPIENTS OF URMIA’S IMAM KHOMEINI TRAINING HOSPITAL

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Renal transplantation remains the treatment of choice for end-stage renal disease (ESRD) in regard to patient survival. Iran was one of the first countries in the Middle East that began renal transplantation. In a cross-sectional study, we enrolled all cadaveric renal transplant recipients since 2001 until 2007 in Urmia, Iran. 39 cases had criteria to be included in our study by an aim-based sampling. Data about related variables was collected by checklist. Then collected data were entered in SPSS software ver16 and analyzed by Kaplan-Meier test and descriptive statistics. Mean age of graft recipients was 35.18±14.27. 21 patients (53.8%) were male. They developed ESRD because of DM (7 cases=21.2%), HTN (24.2%), Glomerulopathies (36.4%), Polycystic Disease (PKD) (2.6%), and 5 (15.2%) other causes. 4 recipients (10.3%) were hospitalized again because of ATN after transplant. Acute rejection were seen in 7 (17.9%) of recipients. Surgical complications after transplantation included: Urinoma, lymphocele, and surgical site leakage (each in one case). One year patient survival was 89.7% in this study. 4 recipients died within one to 9 months after transplantation. Death-censored one-year graft survival was 100%. Survival rate of cadaveric transplants is in good range. So according to the possibility of transplanting other organs in this method, it’s recommended to make policies to improve cadaveric transplantation.
REPEATED FASTING IN RAMADAN HAS NO IMPACT ON RENAL ALLOGRAFT FUNCTION

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Muslims must refrain from eating, drinking, smoking, and sexual relations from sunrise to sunset during the month of Ramadan, the ninth month of the Muslim calendar. Many Muslim kidney transplant recipients expressed their wishes to fast during Ramadan. Fasting during Ramadan is obligatory for every healthy, adult Muslim whereas the sick persons are among those exempt. The aim of our study was to evaluate whether repeated fasting in previous months of Ramadan adversely affects on kidney recipient volunteers. The study was carried out in the month of Ramadan (September to October 2007), average duration of fasting was 12 hours a day, volunteers were allowed to eat freely from Iftar to Sahar (sunset to dawn). All patients fasted during Ramadan in the study period and at least the previous two years. We observed 14 cases (13 male/1 female) with repeated fasting in previous Ramadan months (sum 97 fasting), their mean age 41.2 ± 9.9 years. We observed no significant change in serum creatinine and GFR from before to after Ramadan in our patients that fasted for equal or more 3 consecutive years (86.3 ± 29.1 and 88.2 ± 34.2 ml/min, P = NS), but most of other parameters were similar in both groups. Moreover, we found three recipients with good renal function who had fasted 12 consecutive Ramadan months. The current study indicates that there is no adverse effect associated with repeated fasting on allograft function.

OUTCOME OF KIDNEY TRANSPLANT FROM CADAVERIC DONOR WITH ELEVATED SERUM CREATININE

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The increasing need for kidney transplant has led to long waiting lists and forced authorities to step beyond their standard criteria for acceptable kidneys from cadaveric donors. But the question remains about the benefit of these outbound kidneys. We conducted a retrospective analysis of all kidney transplants performed at Emam Reza Hospital of Mashhad, Iran, during January 2002 to April 2008 from cadaveric donors. A total of 194 kidney transplants met the criteria of which 137 had donors with creatinine less than 1.5mg/dl and 57 had creatinine greater than or equal to 1.5mg/dl. Then required information was collected from transplant clinic to which all patients had regular visits. Average follow up time was 33 month (maximum of 78). According to Kaplan-Meier survival analysis the mean graft survival for those with normal creatinine was 65 (60-69) month and for those with creatinine greater than or equal to 1.5mg/dl was 60 (52-69) month. But the difference was not statistically significant. Although graft survival was 5 month less in kidney recipients from cadaveric donor with creatinine above 1.5 but the difference was not statistically significant. Even if significant, due to organ shortage crisis this would not be an appropriate exclusion criterion instead a good factor to justify the recipients.
P-55
THE IMPACT OF DEPRESSION ON HEALTH CARE UTILIZATION IN KIDNEY TRANSPLANT RECIPIENTS

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Although several studies have demonstrated a relationship between mental health and utilization of health care in other chronic illnesses, such evidences is lacking in post transplant patients. This study aims to investigate the effect of depression – as a common psychiatric co morbidity- after kidney transplantation, on health care utilization. This cohort was held on 99 patients with a first-time kidney transplant (between 6 months and 1 year before enrollment) in Baqiyatallah Hospital (Tehran) between 2004 and 2006. From these, 78 (79%) patients finished the study. These patients were followed up for one year, for health care utilization (HCU) including the number of hospital admission days, and the frequency of home nurse visits, outpatient physician visits and patient’s emergency department visits for any medical reasons. These patients were grouped into Group I (with depression; n=14) and Group II (without depression; n=64), according to Hospital Anxiety and Depression Scale (HADS). The two groups were matched for age, sex and somatic comorbidities measured by Ifudu comorbidity index (p>0.05). Results: Frequency of emergency department visits was significantly higher in patients with depression (71.4% vs. 35.9%, p=0.01). Outpatient physician visits, hospital admissions and home nurse care were not significantly different between the two groups (p>0.05). In conclusion, depression not only affects the kidney transplanted patients themselves, but also puts the health care system under economic pressure. We recommend screening of all renal transplanted subjects for this common psychiatric comorbidity, and treating it when diagnosis is made. Such effort may reduce the health care system’s economic burden.

P-56
CHRONIC KIDNEY DISEASE AFTER HEMATOPOIETIC CELL TRANSPLANTATION : FREQUENCY, RISK FACTORS AND OUTCOME IN IRAN-TEHRAN DR SHARIATI HOSPITAL

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Advances in the care of patients undergoing haematopoietic cell transplantation (HCT) and increased survival rates, allows a better recognition of HCT associated renal injuries. Occurrence of chronic kidney disease (CKD) after HCT is rare and only a few cases have been reported. The aim of this study is to evaluate the frequency of CKD in patients who received HCT for hematologic and non hematologic disorders. In order to evaluate the frequency of CKD and its risk factors, a prospective study was done Between 1997 and 2006 on 1693 patients at the Bone Marrow Transplant Research Center of Shariati hospital. Chronic kidney Disease was defined as doubling of serum creatinine from baseline within 1 year of receiving the transplantation and after that. The risk of CKD in relation to non based total body irradiation conditioning regimen, type of graft (allograft vs. autograft) and, graft versus host disease(GVHD, drug toxicity and veno occlusive disease(VOD) was examined in 1963 HCT patients. Results: total number of 66 patients (4%) develop kidney involvement. By 6–12 months after HCT, approximately 33% of patients will develop CKD (23 patients in allograft and 4 in autograft). In most cases of CKD patients, the cause is idiopathic and in 23 patients who developed CKD, 5 patients had Acute Kidney Injury during transplantation period and had GVHD. other renal involvements were: hypertension 17%, proteinuria 15%, hydronephrosis 2%, hematuria 18%, diabetes 3%. Conclusion: The frequency of CKD has not been well characterized and it seems to be high. It is important to know the specific type of kidney damage and to determine when to be aware of the time of occurrence of this renal complications and how best to treat the patient with renal injury secondary to nephrotic syndrome and idiopathic CKD.
P-57
AFRICAN AMERICAN WOMEN AND OLDER PATIENTS ARE AT RISK FOR A GREATER DECLINE IN RENAL FUNCTION FOLLOWING LIVING KIDNEY DONATION

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Living donor kidney transplantation offers many advantages to the recipient. Longer allograft survival, fewer postoperative complications and better renal function are just some of the benefits of receiving living donor kidneys compared to deceased donor organs. In contrast, the consequences to the donor in terms of renal function are less well defined. Moreover, it is not clear whether all donors share an equal risk to their renal function following donation. In this study, we calculated the estimated GFR (eGFR) by the MDRD formula in donors prior to and following renal donation. We compared the percentage decline in renal function amongst various ages and other demographic groups using individual patients as their own controls. Between 4/93 and 11/07, a total of 341 living donor transplants were performed in a single center. Of these, 103 donor charts (38 men, 65 women) were available for review. Donor characteristics were: 11 African American (AA), 94 white, age 40.3 ± 9.6 years of age and pre-op eGFR 93.3 ± 17.7 ml/min. All donors had normal blood pressures without medications, normal urinalysis and normal urinary protein levels. On average, donors experienced a -34.7% fall in eGFR to 59.8 ± 10.9 ml/min determined 273 days post-transplantation. A greater decline in eGFR was noted in the AA group -41% compared to white patients -34% (p=0.03). The majority of the decline in the AA group was accounted by AA women in whom the fall in eGFR was -46% compared to AA men -31% and white women -34% (p=0.02). The percent decline in eGFR was not different amongst the various age groups. However, donors >50 years old had a post-donation eGFR of 55.1 ml/min vs. 60.9 ml/min in those < 50 years old (p=0.03) reflecting the lower eGFR pre-donation (older 84.7 vs. younger 95.2 ml/min, p=0.02). The percent decline in eGFR did not change with time after donation (0-1 month 37%, 1-12 months 34%, >1year 30%). These results suggest that renal function declines abruptly following kidney donation in all patients but remains stable or improves afterwards. AA women and older donors are at higher risk because they experience a greater immediate fall in eGFR and have a lower post-donation eGFR respectively. Clearly, a larger and prospective study is required to assess the potential renal functional decline in healthy living kidney donors.

P-58
MYCOPHENOLATE MOFETIL DOSE REDUCTION IN RENAL TRANSPLANT RECIPIENTS: A FIVE-YEAR FOLLOW-UP STUDY

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Mycophenolate mofetil (MMF), an immunosuppressant that is widely used in renal transplant, is associated with several dose-dependent hematologic and gastrointestinal side effects that lead to dose reduction or even discontinuation. The aim of this study was to compare the renal allograft function and acute rejection episodes in kidney allograft recipients who were on two different doses of mycophenolate mofetil for at least five years. Fifty-five kidney allograft recipients who were on MMF were randomly selected and followed for evidences of acute rejection or drug side effects. All patients were followed for at least five years after transplantation. Renal function tests (blood urea and serum creatinine) were measured monthly for two years and then every two months Twenty-two patients (40%) underwent MMF dose reduction to 1.35-0.23 gr/day due to perceived side effects or economic reasons (group 1). The mean time for this change was 4.2 ± 2.1 months after the kidney transplant. The remaining patients (group 2, n =33) were continued on MMF 2 g/d drug dosage. Statistical analysis was performed using SPSS 11.0 (Student t test). A P value <0.05 was considered significant. Results. The two groups were comparable regarding age, gender and their immunosuppressive medications. The renal function tests were comparable between the two groups at the end of this study. Mean blood urea were 44.8 +/- 5.8 and 46.8 +/- 6.8 mg/dl in group 1 and 2, respectively (P > 0.05). Mean serum creatinine were also 1.32 +/-0.14 and 1.38 +/- 0.21 in group 1 and 2, respectively (P > 0.05). There were two graft losses and one patients loss in group 2. There was also 2 graft loss among group 1 patients. In conclusion, our study showed that MMF dose reduction is not associated with an increased risk of acute renal allograft rejection or impaired allograft function in a five-year follow-up period.
**P-59**

**KIDNEY TRANSPLANTATION DURING AUTOIMMUNE DISEASES**

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Renal transplantation during autoimmune diseases is possible in the period of clinical and immunological remission of the disease. The results concerning the survival of the grafts and especially of the patients are much discussed and depend on the other manifestations of the causal disease. We report in a retrospective study a series of 9 patients: 3 men and 6 women having autoimmune diseases: systemic lupus erythematos (4 cases), Good pasture syndrome (2 cases) and disease of Wegener (3 cases) old on average of 25, 11±6, 82 years (12-35) and transplanted renal after a median of 41, 29 months dialysis (19-78). They account for 2, 20% of the renal patients grafted since 18/6/1986 until the 31/12/2007. It is about a first transplantation for all the patients with three cadaver kidneys and six of donor living related. The average age of the donor was of 32, 88± 13, 25 years (21-54). Induction was containing thymoglobulin (6 cases) and the ant reject treatment associates corticoids, a anticalcineurine as soon as serum creatinin is with the lower part of 200 µmol/l (Tacrolimus in 3 cases and Cyclosporine in 6) and an inhibitor of the purine bases: Mycophenolate mofetil (8 cases) and Azathioprine (1 case). Three patients presented one acute tubular necrosis with delayed resumption from the renal function (2 corpses and 1 DVA) and two were treated for an acute rejection by thymoglobulin and bolus doe of methyl prednisolone with standardization of the renal function. Two patients present a chronic dysfunction of the graft proven histologically. No case of repetition of the initial nephropathy was announced. A hypertension was present among three patients. The infectious complications were present in 8 cases 5 urinary infections, an infection with CMV and Zona). A patient developed diabetes mellitus and another toxicity with the cyclosporine. Average serum creatinine with 6, 12 and 24 months was respectively of 92,16±14,9, 92,6±18,39 and 92±2,82 µmol / l. The median of survival of the patients is 14, 85 months (1-144) Survival with 1 and 2 years is comparable with that of all the others grafted of the kidney all nephropathies confused. Only one patient was transferred in hemodialysis because of a chronic dysfunction of the graft and deceased 8 months later by sudden death. A follow-up in the medium and long term will make it possible to have resulted statistically significant. Renal transplantation during autoimmune diseases is rare. The immunosuppression treatment is not different from the other nephropathies. Acute tubular necrosis and the acute rejection are frequent. The function of the graft is normal to 6, 12 and 24 months.

**P-60**

**THROMBOCYTOPENIA IN BRAIN DEAD PATIENTS: FREQUENCY AND IMPACT ON ORGAN DONATION**

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Brain dead patients, due to their critical condition, may easily develop complications that could interfere with organ donation. One of these complications is thrombocytopenia. Thrombocytopenia due to different etiologies may lead to massive hemorrhage that threatens the organ donation process. The aim of the current study is to evaluate the presence and severity of thrombocytopenia in brain dead patients and its effect on organ donation process. We retrospectively searched the records of brain death patients at Organ Procurement Unit of Shaheed Beheshti University, Tehran, Iran. All 93 cases from January 2005 up to the present time were evaluated for the presence of thrombocytopenia. Based on their platelet count, they were categorized to normal, thrombocytopenic (50,000< and the ant reject treatment associates corticoids, a anticalcineurine as soon as serum creatinin is with the lower part of 200 µmol/l (Tacrolimus in 3 cases and Cyclosporine in 6) and an inhibitor of the purine bases: Mycophenolate mofetil (8 cases) and Azathioprine (1 case). Three patients presented one acute tubular necrosis with delayed resumption from the renal function (2 corpses and 1 DVA) and two were treated for an acute rejection by thymoglobulin and bolus doe of methyl prednisolone with standardization of the renal function. Two patients present a chronic dysfunction of the graft proven histologically. No case of repetition of the initial nephropathy was announced. A hypertension was present among three patients. The infectious complications were present in 8 cases 5 urinary infections, an infection with CMV and Zona). A patient developed diabetes mellitus and another toxicity with the cyclosporine. Average serum creatinine with 6, 12 and 24 months was respectively of 92,16±14,9, 92,6±18,39 and 92±2,82 µmol / l. The median of survival of the patients is 14, 85 months (1-144) Survival with 1 and 2 years is comparable with that of all the others grafted of the kidney all nephropathies confused. Only one patient was transferred in hemodialysis because of a chronic dysfunction of the graft and deceased 8 months later by sudden death. A follow-up in the medium and long term will make it possible to have resulted statistically significant. Renal transplantation during autoimmune diseases is rare. The immunosuppression treatment is not different from the other nephropathies. Acute tubular necrosis and the acute rejection are frequent. The function of the graft is normal to 6, 12 and 24 months.
P-61
SPLIT LIVER TRANSPLANTATION IN SHIRAZ TRANSPLANT CENTER

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Cadaveric organ splitting results from improved understanding of surgical anatomy of the liver and is a possible mechanism to expand the organ pool. In this study we report the first series of split liver transplantation (SLT) performed in Shiraz transplant unit. From June 2006 till June 2008, 17 pairs of SLT (70.6% ex-situ, 29.4% in-situ) were performed in our institute. Mean age of the donors (32 male, 2 female) were 23.15±9 y/o and all of them had been stable at the time of harvesting according to vital signs, liver function tests, electrolytes and urine output. The decision on splitting was taken by the surgical team according to donor status and urgency of the recipients’ status. Mean age of the pediatric recipients (8 males, 11 females) were 5.18±4.62 and mean age of the adults (8 males, 7 females) were 26.60±7.92 y/o. The main indications were biliary atresia (17.6%) followed by Wilson disease (14.7%), cryptogenic cirrhosis (14.7%), sclerosing cholangitis (14.7%) and progressive familial intrahepatic cholestasis (14.7%). All of the patients were in Child C, 28% of them had preoperative encephalopathy and 1 of them was a case of retransplantation because of hepatic artery thrombosis of previous graft. The mean cold ischemic time was a 1.8±0.8 hour for in situ and 8.2±4.6 hours for ex situ splitting. Left lateral segment and left lobe were used in 6 and 11 cases respectively. All of the procedures were done by piggyback technique. In-hospital mortality for pediatric and adult group was 68.4% and 26.7% respectively. Primary graft nonfunction (52.9%), vascular complications (29.4%), sepsis (11.8%), and biliary complications (5.9%) were the main causes of this mortality. Experience of our center indicates that SLT has a high rate of mortality and morbidity and we must use more effort to decrease this.

P-62
RENAL FUNCTION AND HYPERNATREMIA CORRECTION FOLLOWING INTENSIVE CARE OF CADAVERIC DONORS BEFORE ORGAN RETRIEVAL

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The quality of harvested organs has a great impact on outcome of transplantation. Hypermotremia have previously been shown to affect the outcome of liver transplantation. Increased level of creatinine in donors is also associated with delayed graft functioning in kidney recipients. Such pre-transplantation situations in donors could be corrected in many cases with proper care of the brain dead patients. The aim of the current study is to investigate the presence of such conditions in brain dead patients and the result of intensive care to correct the situation. We retrospectively reviewed hospitalization record of 93 brain dead patients in our center. Data regarding serum level of sodium and creatinine were extracted at the time of transferring the brain dead patients to transplantation ICU and later at the time of organ harvest. We used paired-sample t-test to compare ICU admission values with pre-harvest ones. The mean serum Na at the time of admission to transplantation ICU was 152.9 ± 13.2 mEq/L that decreased to 148.1 ± 11.6 mEq/L at the time of procurement surgery (p= 0.001). The mean serum creatinine also decrease from 1.8 ± 1.1 mg/dL at transplantation-ICU to 1.6 ± 1.3 mg/dL at procurement procedure (p<0.001). In our study, we found that the serum level of sodium and creatinine have been decreased during hospitalization in transplantation ICU. We believe that proper care to brain dead patients could correct the undesirable condition of the patients and result in a harvested organ of better quality.
E-33 EARLY COLONIZATION OF URINARY TRACT AND RISK OF URINARY TRACT INFECTION IN TRANSPLANT RECIPIENTS

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Urinary tract infection is the most common bacterial infection in renal transplant recipients. Early post-operative colonization of urinary tract may be a risk factor for subsequent infections. We intended to evaluate the role of early post-operative bacteriuria in the development of future symptomatic urinary tract infections in renal transplant recipients. A prospective cohort of patients transplanted between January and December 2004 were studied. Urine cultures were taken twice in first ten days post-transplant from all patients (surveillance culture). For the next 6 months follow-up urine cultures were obtained periodically from all patients on OPD visits and whenever urinary tract infection was suspected on clinical grounds. Result 107 patients, 85 Male and 22 Females were followed. 14 (13.3%) had positive surveillance culture. In the follow-up period, 36 (33.6%) patients developed symptomatic infection. Ten (71%) out of 14 in surveillance culture positive group, and 26 (28%) out of 94 in negative surveillance culture group (RR 2.5, 95% CI 1.6 - 4.1, P=0.002). Females did not show a higher incidence of UTI compared to Males (36.7% vs. 33%). D.J stenting and its duration did not increase the risk of symptomatic infection. In conclusion, early post transplant urine culture positivity is a risk factor for subsequent UTI, whether treating this will decrease the risk needs further evaluation.

E-34 CONVERSION TO SIROLIMUS BASED IMMUNOSUPPRESSION IN KIDNEY TRANSPLANT RECIPIENTS: A SINGLE CENTER STUDY

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Cyclosporine (Cs-A) is a cornerstone of the immunosuppressive treatments after kidney transplantation. However, it carries significant nephrotoxicity. Cs-A withdrawal and use of sirolimus (SRL) is associated with improvement of renal function. In this study, safety and efficacy of SRL conversion in kidney transplant recipients was sought. In 63 kidney transplant recipients, Cs-A was discontinued and SRL started. A preconversion kidney biopsy was performed in 52 patients. The major cause for biopsy was increased serum creatinine in 48 patients. Serum creatinine and GFR were measured at conversion and at 1, 3, 6 and 12 months post conversion. The occurrence of adverse effects of SRL was also evaluated. The major cause for conversion according to the preconversion kidney biopsy was Cs-A nephrotoxicity in 33 patients followed by chronic allograft nephropathy (CAN) in 13. Mean time to conversion was 60.9± 5 months. The number of post conversion biopsies was low and we could not evaluate the impact of conversion on pathologic changes in the kidney. The mean follow up time was 10± 8.3 months. The mean GFR at time of conversion was 56.78± 17.89 cc/min. It improved significantly during follow up. The mean GFR was 62.31± 15.8, 59.75± 15.87, 59.51± 17 and 58.62± 20.79 at 1, 3, 6 and 12 months, respectively. Common adverse effects of SRL included anemia in 9, thrombocytopenia in 2, anemia and thrombocytopenia in 1, pancytopenia in 1, hyperlipidemia in 1, proteinuria in 7 and oral aphthae in 12. SRL was discontinued in 4 patients and the reasons were refractory peripheral edema, severe lymphedema, severe hyperlipidemia and proteinuria> 1g/d. In conclusion, Cs-A withdrawal and conversion to SRL was associated with improvement of renal function. No serious adverse effect was observed with SRL. SRL provides an alternative to Cs-A in maintenance immunosuppressive therapy after kidney transplantation.
GALLSTONE DISEASE AND ITS COMPLICATIONS OF IT IN KIDNEY TRANSPLANTATION PATIENTS

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In patients who underwent kidney transplantation an increased incidence of gallstone has been observed. The real incidence of gallstone disease and its complications in kidney transplant recipients (KTR) are not exactly known. We therefore evaluated the incidence of symptomatic gallstone disease and complications of it in our KTR. A retrospective study was conducted in 340 KTR with variable post-transplant follow-up. Patients underwent kidney transplantation between 1984 and 2007. Data are extracted from patient’s files. Variables consist of sex, age, BMI, duration after transplantation, type of transplantation, transplant number, history of diabetes, pre and post transplant cholecystectomy, and type of surgery, post-cholecystectomy complications, number and size of gallstones. Positive history of gallstone disease was found in 21 (6.2%) patients. In 4 (19%) of patients that all were male, pre-transplant gallstone disease was detected. Pre-transplant cholecystectomy was done in 3 patients. Post-transplant gallstone disease was detected in 17 (81%) of patients. 12 (71%) patients were male. Mean age of patients was 47±14 years. 5 (29%) patients had diabetes mellitus. Post-transplant cholecystectomy was done in 10 (59%) patients (20% with laparoscopy). In 2 (20%) patients post-cholecystectomy complications (wound infection) were reported. We did not have any mortality due to gallstone disease. In conclusion, 5% of KTR had post-transplant gallstone disease. The frequency of gallstone disease in general population of our country was 5.7% in some reports. In contrast to some studies in western countries the frequency of gallstone disease in our patients was not higher than general population and the complications of it were not significant. Therefore, pre and post transplant screening for gallstone disease are not recommended.

INCIDENCE OF CYTOMEGALOVIRUS INFECTION AND DISEASE IN KIDNEY TRANSPLANT RECIPIENTS

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Cytomegalovirus (CMV) is the most common infection complication in solid-organ transplant recipient especially kidney, and is associated with an increased risk of acute and chronic rejection. The spectrum of CMV infection ranges from latent infection to asymptomatic viral shedding to life-threatening multisystem disease. The aim of this study was to detect presence of CMV infection by laboratory studies before development of clinical features of CMV disease. We also assess incidence, diagnosis, and clinical features of CMV infection and disease along side its associated risk factors. From March 2006 to February 2008, we prospectively studied 40 kidney transplant recipients (13 female, 27 male, mean age of 40) with their donors in Sina Renal Transplant Center. All participants including donors underwent CMV IgG and IgM antibody tittering as long as CMV PCRand CMV AgPP65 detection. The same series of laboratory studies as long as physical examination, liver and renal function tests, were performed for kidney recipients only every week while being hospitalized, every other week for two months, and monthly for 6 months. Infection was defined as positive PCR, AgPP65, or CMV IgM antibody and disease was delineated as emerging signs and symptoms of CMV infection. The association of age, sex, serostatus, dialysis duration, transplant rejection and ATG administration with CMV disease or infection development was analyzed. Of the total of 40 patients, 12 patients were hospitalized after mean 15.7 weeks (range 1-35 wk) post operation because of CMV disease. 33 patients developed CMV infection with mean time of 5 weeks (range 1-24 wk) postoperatively, of whom 17 cases were initially diagnosed to be infected using CMV PCR method. 5 patients experienced acute rejection of whom 2 cases lead to graft loss. ATG administration has been shown to be statistically significantly related with disease occurrence (RR: 3.33; CI: 1.2-9.2, P<0.05). Age, sex, dialysis duration, serostatus of donors and recipients and acute rejection were statistically not significantly related with CMV disease or infection. In conclusion our study showed that 36 percent of CMV infected patients proceeded to CMV disease, so early diagnosis of CMV infection would probably reduce the prevalence of CMV disease. It seems that PCR is the most reliable method for early detection of CMV infection. In addition, we assume that postoperative ATG administration is a risk factor for CMV disease but not CMV infection development. With further increasing the number of recruited patients in successive phases of our project, the role of other measured variables in CMV infection and disease incidence is yet to be determined.
P-67
SWITCHABILITY OF CELLCEPT (ROCHE) WITH THE NEW GENERIC FORMULATION, IMUNOCELL (BENTA SAL, LEBANON) ACCORDING TO FDA RULES AND REGULATIONS.

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According to the FDA rules and regulations, all new drugs need proof that they are safe, tolerable and effective before they can be approved for marketing. The FDA also developed and issued explicit guidelines for a generic product’s bioequivalency and stability, ensuring that products retain potency. The main rule is: if a drug product contains a drug substance that is chemically identical and is delivered to the site of action at the same rate and extent as another drug product then it is equivalent and can be substituted (switchable) for that drug product. Methods used to define bioequivalence as stated by the rule (FDA 21 CFR 320, 24) are: 1) Pharmacokinetic (PK) Studies in healthy volunteers, 2) Comparative clinical trials. We have evaluated the switchability of Imunocell) Benta sa,l Beirut Lebanon with Cellcept (Roche Switzerland using all of the above FDA rules. 1) PK; In a Single oral dose comparative, bioavailability study and in a multicenter clinical study. The study was performed according to the Helsinki accord of medical ethics and monitored by the contract research organization (CRO) Transmedical s.a.l, which is EU audit for good clinical practice (GCP). In healthy volunteers the pharmacokinetics of Immunocell and Cellcept were determined with blood levels at: 0, 20, 40, 1, 1h:20 min, 2h, 3h, 4h, 6h, 8h, 10h, 12h and 24 hours. The area under curve (AUC), AUC extrapolated to infinity (AUC0-inf), rate of absorption (Tmax), extent of absorption (Cmax), half time (T1/2) of Immunocell and Cellcept were, (97.71166 – 103.95548) and (102.6642 – 108.3501) respectively, which are within the general 80-125 % FDA acceptance range. 2) Clinical trials: A comparative clinical trials in stable renal transplant patients: A multi-center study was performed at the American University of Beirut, St Therese Hospital, Sacre Coeur teaching hospital and, Transmedical Research Institute, Beirut, Lebanon.

Imunocell and Cellcept 500 mg tablets were 98 % & 95 % respectively which is within the 80-125 % FDA acceptance range. The Results from the, FDA required, studies for interchangeability (Bioavailability- Bioequivalence, Clinical Studies ) indicates that Imunocell and CellCept 500 mg tablets are switchable.

P-68
NOVEL SIMPLIFIED APPROACH FOR CYCLOSPORINE-A THERAPY MONITORING IN DE NOVO KIDNEY TRANSPLANT PATIENTS: TIME AVERAGE CYCLOSPORINE MAXIMUM LYMPHOCYTE LEVEL

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To monitor prospectively and simultaneously the De novo CsA-treated kidney transplant patients with the time average Cyclosporine-A (CsA) maximum lymphocyte level (LT1:30L) and its corresponding whole blood level (BT1:30L). CsA LT1:30L and BT1:30L were determined simultaneously at one and a half hour after drug ingestion in 37 patients at 1, 2, and 3 months after kidney transplantation. Patients with biopsy-proven acute rejection (REJ+ group) were compared to those without rejection (REJ- group) in relation to LT1:30L, BT1:30L and total lymphocyte count (TLC). Five patients (13.5%) experienced acute rejection during the study period. LT1:30L were significantly lower in the REJ+ group (51±12, 52±8 and 45±10 pg/lymphocyte at 1, 2, and 3 months as compared to the REJ- (82±58, 77±36 and 73 ± 35 pg/lymphocyte, P=0.005, P=0.01 and P=0.01) respectively, despite similar BT1:30L (2031±350, 1679 ± 562 and 1093 ± 193 ng/mL vs. 2112 ± 1023, 1939 ± 647 and 1591 ± 504 ng/mL and similar CsA dosages. TLC were significantly higher in the REJ+ group as compared to the REJ- one during the first 2 months (0.00236 ± 0.00052 x 109/L vs. 0.00174 ± 0.001 x 109/L and 0.00247 ± 0.00029 x 109/L vs. 0.00155 ±0.00093, P=0.05 and P=0.06) respectively and similar at the third month (0.00167 ± 0.00025 x 109/L vs. 0.0014 ±0.00059 x 109/L, P=NS). Monthly mean serum creatinine levels were significantly better in the REJ- group. Similar findings were observed when all monitoring parameters were compared at the time of graft biopsy. In conclusions, These results confirm our previous observations on the strong association between acute rejection and low CsA intra-cellular levels irrespective of whole blood concentrations. CsA LT1:30L seems to offer a simplified and more reliable alternative than does BT1:30L for cyclosporine-A monitoring in kidney transplant patients.
APPLICATION OF ARTIFICIAL NEURAL NETWORK TO PREDICT GRAFT SURVIVAL IN ADULT PATIENTS AFTER KIDNEY TRANSPLANTATION: REPORT OF 22 YEARS FOLLOW UP OF 316 PATIENTS

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Kidney transplantation had been evaluated in some researches in our country mainly with a clinical approach. In this research we evaluated graft survival in kidney recipients and factors impacting on survival rates. Artificial neural networks have a good ability in modeling complex relationships, so we used this ability to demonstrate a model for prediction of 5yr graft survival after transplantation. This retrospective study was done on 316 kidney transplants from 1984 through 2006. Kaplan-meire method, Cox regression test, goodness of fit test and artificial neural networks were used in analysis. Body Mass Index (BMI) and type of transplantation (living/cadaver) had significant effects on graft survival. 1yr, 3yr and 5yr graft survival was 96% and 93% and 90% respectively. Suggested artificial neural network model had good accuracy (72%) and appropriate results in goodness of fit test. Sensitivity of model in identification of true positive situations was more than false negatives situations (72% Vs 61%). Graft survival in living donors was more than cadaver donors. Graft survival decreased when the BMI increased at transplantation time. Artificial neural networks can be used in constructing models to prediction of graft survival in kidney transplantation.

THE IMPACT OF HEPATITIS B INFECTION ON OUTCOME OF KIDNEY TRANSPLANTATION: A LONG TERM STUDY

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Most of the patients requiring renal replacement therapy prefer kidney transplantation because of the better quality of life after transplantation than dialysis. With the success of kidney transplantation, liver disease has emerged as an important cause of morbidity and mortality of renal recipients. In this report, we studied retrospectively the impact of HBV infection on patients and graft survival in both short-and long-terms. Ninety nine renal transplant patients infected with hepatitis B virus on follow-up in two major transplant centers were included. These patients were grafted between 1986 and 2005 and divided into two groups: (1) hepatitis B surface antigen only positive (HBsAg), (2) hepatitis C virus antibodies (HCV Ab) positive as well. There were 88 patients with HBsAg and 11 with HBsAg and HCV Ab. The male: female ratio was 76:23, the mean age was 38.8 ± 13.2 years, and the median follow-up period post-transplantation was 19 months. The allograft survival rate in the first group (HBV+) was higher compared to the second group (HBV+ and HCV+) but was not significant; One, five and ten years graft survival rates were 91, 77 and 62 and 70, 56 and 28 in the first and second groups, respectively (P = 0.07). The overall mortality in the first and second groups was 4.5% (4 of 88) and 27% (3 of 11), respectively; i.e. mortality rate was higher in the second group (P = 0.02). One patient with HBV developed Squamous cell carcinoma of skin and another had Kaposi’s sarcoma. In conclusion, patient and graft survival in hepatitis B infected recipients was promising. Therefore, HBsAg-positive patients should not categorically reject for renal transplantation. However, recipients with HBV and HCV infections had a poor patient survival rate compared to patients with only HBV infection. However, there was no significant difference in terms of renal graft survival.
**P-71**

**EFFECT OF METABOLIC ALKALOSIS ON CYCLOSPORIN A-INDUCED RAT NEPHROTOXICITY**

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Clinical use of cyclosporin A (CsA) is often limited by nephrotoxicity, which remains a major problem. CsA causes metabolic and distal tubular acidosis. To restore acid–base balance, the kidneys initiate a complex set of responses to induce a net production and release of bicarbonate ions. The aim of this study was to elucidate whether a background of metabolic alkalosis could ameliorates the CsA-induced nephrotoxicity. The experiments were performed on male rats. Seven days after uninephrectomy, rats were divided to 4 groups (n=5 in each group). Metabolic alkalosis was induced by adding 0.28 mol/L NaHCO3 in the drinking water for 7 days, whereas control rats received regular tap water. The bicarbonate pretreated rats were administered either CsA (50 mg/kg, i.p.) or vehicle, daily for a week. At the end of the procedure, animals were placed in metabolic cages for 24 hours and arterial blood was drawn for blood criteria measurements. Creatinine clearance (Ccr), total urine proteins, urine pH and NAG activity were measured. Kidneys were fixed in 10% formaldehyde for histological evaluations. Ccr was significantly affected by the administration of CsA (49.8 ± 1.25 vs. 41.4 ± 1.68 ml/h-1/100g, P<0.05). The effect of CsA on serum pH and [HCO3-] were prevented by pretreatment of NaHCO3. However, it couldn’t prevent CsA-induced increase in NAG activity (1.26 ± 0.32 vs. 1.13 ± 0.210 U/L, P<0.05) and reduction in Ccr. Renal histological data supported the functional findings. Overall, correction of metabolic acidosis couldn’t prevent the CsA-induced reduction in function. These data suggest that there are other factors than acid-base status which may influence CsA-induced nephrotoxicity.

**P-72**

**PRETRANSPLANT AND POSTTRANSPLANT SOLUBLE CD30 FOR PREDICTION AND DIAGNOSIS OF ACUTE KIDNEY ALLOGRAFT REJECTION**


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To evaluate serum levels of soluble CD30 (sCD30) for prediction and diagnosis of acute kidney allograft rejection. We prospectively measured serum levels of sCD30 before kidney transplantation, 5 days postoperatively, and at creatinine elevation episodes. The predictive value of sCD30 for diagnosis of AR within the 6 postoperative months was assessed in 203 kidney recipients from living donors. Serum levels of the pretransplant and postoperative sCD30s were 58.10 ± 52.55 mg/dL and 51.55 ± 49.65 mg/dL, respectively (P = .12). Twenty-three patients experienced biopsy-proven acute rejection, 28 had acute allograft dysfunction due to non-immunologic diseases, and the remaining 152 had normal creatinine levels. Pretransplant sCD30 was not different between patients with and without AR (P = .77). Post transplant sCD30 was higher in AR group. The median serum level of post transplant sCD30 was 52 U/mL in the AR group and 26.3 U/mL in a control group matched for age, sex, and donor source (P < .001). The post transplant sCD30 levels allowed a differentiation of kidney recipients with subsequent AR within 6 postoperative months from those without AR (cutoff value, 41 U/mL; sensitivity; 70%; specificity, 71.7%). Graft survival rates were not associated with sCD30 values. The level of sCD30 at creatinine elevation was not associated with AR diagnosis. Post transplant sCD30 level is higher in patients with acute rejection, but its clinical value requires further investigation. To elucidate the diagnostic value of sCD30, we have to better understand factors that influence this marker.
EVOLUTION OF LUNG TRANSPLANTATION IN IRAN

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Lung transplantation has a history of eight years in Iran. There are two official lung-transplantation centers; both of them are university-based and located in Tehran. The majority of transplantations are performed in Masih Daneshvari Hospital. During this period, Masih Daneshvari had passed its training curve for single and double lung transplantations. The hospital also established an organ procurement unit in 2004 and an organ donation database (Iran-Edha) in 2005. During these years, 24 patients were transplanted in Iran, 8 of them are still alive. The number of transplantations shows a gradual increase during this period. Waiting list for lung transplantation also shows a ten-fold increase during past four years and reached from 16 patients in 2004 to 53, 103, 139 and 173 in 2005, 2006, 2007 and 2008. Brain death organ procurement has been increased from 2004 till the present time and reached from 21 per year in 2005 to 43 per year in 2007 in our center. To ensure a sustained progress in organ donation and transplantation, especially lung transplantation, cultural development about organ transplantation was put into prospect and intensive efforts have been made during past several years. Providing financial and social support for lung transplanted patients were other developmental plans to help lung transplanted patients feel less pressure and focus on their health. Despite such efforts, the number of lung transplantation is not enough compared to expansion of the waiting list. This is caused by lack of donors instead of technical difficulties. We believe that further development of lung transplantation requires more cultural development, along with better social and governmental support.

URINARY TRACT INFECTION IN CHILDREN AFTER 1ST MONTH OF KIDNEY TRANSPLANTATION

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Urinary tract infection (UTI) is the most common bacterial infection following kidney transplantation (KT). The purpose of this study was to evaluate UTI following kidney transplantation. Medical records of all children who had been transplanted in Shiraz Nemazee Hospital and were under follow-up of pediatric nephrologists for 6 months to 15 years (mean=59.2±39 months) were reviewed and the data from their last visit was included in this study. Records of episodes of proved UTI following 1st month of transplantation were collected. SPSS 15.1 software was used for data analysis. Results Of two hundred and sixteen children ≤19 years at the time of transplantation, 138 patients were followed by pediatric nephrologists in Shiraz and included in this study. The mean age at transplantation time was 13.6±3.5 years with age range of 3 to 19 years. The male to female ratio was 1.33. Their Primary renal diseases were reflux-obstruction dysplasia (42%), hereditary-metabolic diseases (34%), glomerular diseases (19%), stone (1.5%) and unknown (3.5%). The kidney donors were deceased (47.8%), related (36.9%) with 80.3% parents, and unrelated (15.2%). The mode of dialysis before transplantation was hemodialysis in the majority of cases (85.5%) and 12.1% had preemptive transplantation. UTI occurred in 24(17.3%) of the children, 12 with only 1 episode, 3 with 2 episodes and more than 2 episodes in 8 patients. Regarding the relationship of UTI and primary renal diseases; 14 (24%) were in reflux-obstruction group, 6(12.5%) in hereditary disease, 3(11.5%) in glomerular disease, and 1 in stone disease group. Despite using prophylactic antibiotics by 9 patients (6.5%), recurrent UTI occurred in 5. Recurrent UTI occurred in 6 children with neurogenic bladder and in one child with stone disease despite post-transplant native nephrectomy in the latter. In conclusion, UTI is not common in children after first month of KT in our center, except with primary disease of reflux-obstruction and especially in those with neurogenic bladder.
THE TREND OF REGISTRATION FOR ORGAN DONATION IN IRAN

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Every transplantation system is dependant on organ donation and organ donators. Expanding the number of organ donators and planning for future development requires an evaluation of previous programs and knowledge about the system’s situation. We reviewed here the trend of organ donation volunteers and their characteristics. We used Iran_Ehda database for analysis. It is a website, available at www.ehda.ir, which works in recruitment of organ donation volunteers. The site is managed by organ procurement unit of Massih Daneshvari Hospital, Tehran, Iran. We used descriptive analysis to evaluate the trend of organ donation volunteers during its three years of activity. The number of annual registrations has been increased from 10838 in 2005 to 30305, 70117 and 70359 in 2006, 2007 and September 2008, respectively. It is roughly a 100% annual increase. Regarding the gender difference, in 2005 the number of male and females were the same. In 2006, female constituted 52.4% of volunteers. In 2007 and 2008 it reached to 54.8% and 55.9% of newly registered cases. Regarding the education level of volunteers, 45.7% of the volunteers have diploma or lower degrees in 2005. This figure reached to 50.5%, 53% and 53.2% in 2006, 2007 and 2008, respectively. Our study showed the policy of recruitment of organ donation volunteers using our website was very successful. Doubling the number of registration each year bears a testimony to this. We also found that women gradually increase their share in volunteering for organ donation. We also found that the program is getting more and more popular even among those without a university education.

CONVERSION FROM CYCLOSPORINE TO LOW DOSE TACROLIMUS IN PATIENTS WITH ALLOGRAFT DYSFUNCTION

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Allograft nephropathy remains a common and difficult problem after kidney transplantation. Several clinical trial studies performed to approach and manage this problem by changing the immunosuppressive regimen. Stabilization of renal function in patients with refractory rejection obtained after conversion from cyclosporine –based therapy to Tacrolimus/Mycophenolate mofetil regimen. we designed our study with 34 patients by changing their immunosuppressive regimen from cyclosporine to tacrolimus. Low dose of tacrolimus (0.03-0.05mg/kg/day) due to economical consideration, inability to check prograf plasma level routinely and diabetogenic effect of it started for patients who had GFR less than 50ml/min. plasma level of creatinine checked in 1st, 3rd and 6th month of conversion. We also compare pre conversion fasting blood sugar, blood pressure, hemoglobin, and lipid profile to 6th month of post conversion. Significant decrease in follow up plasma creatinines and patients’ GFR obtained when comparison done between these values and base line data. Rise in systolic and diastolic blood pressure that was occurred after changing of regimen to tacrolimus, was statistically significant (p=0.001 and p= 0.000 respectively).Despite raising in fasting blood sugar in our patients, 92.54 ± 4.76 mg/dl before tacrolimus and 99.87 ± 7.00 mg/dl after starting tacrolimus, diabetogenic effect of tacrolimus was not statistically significant in this study (P value = 0.047). By conclusion, our study demonstrates that lower dose of prograf (0.03-0.05mg/kg/day)could be used for allograft nephropathy without additive need to check plasma level of tacrolimus routinely, although, renal function preserved satisfactory, diabetogenic and hypertensive side effect of tacrolimus diminished.
P-77
RAMADAN INCREASES ORGAN DONATION WILLINGNESS IN IRAN
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Organ shortage is the most limiting factor for transplantation systems. The total value of life lost due to death because of waiting for an organ transplant is greater than $ billions in the world and the excess demand for organs has been increasing over time. We report here the impact of Ramadan on willingness to organ donation in Iran. In a retrospective cohort, we analysed the trend of registries for organ donation in a single center in Iran. Data was extracted from organ procurement unit of Masih Daneshvar hospital. Monthly donation willingness registries achieved to 11528 participants during Ramadan 2007, this rate was 4538 in previous month. The increasing rate was 154 percent. There was a significant difference by means of sociodemographic data of those registered in this month in comparison to the previous months. Influence of Ramadan on donation willingness is similar to its promotive effect of religious behaviors. Donation of an organ is encouraged by Islam, as according to this religion, saving a life is saving all people. This effect may be secondary to the realize of the reality of death or making people to think to other people.

P-78
DIFFERENCES IN DOPPLER ULTRASONOGRAPHIC PARAMETERS BETWEEN THE RIGHT AND LEFT KIDNEY IN RENAL TRANSPLANT DONORS
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Among the numerous modalities applied for the preoperative evaluation of donor kidneys, renal Doppler ultrasonography (DU) provides both morphologic and functional characteristics of the kidneys. Nonetheless, the variability within DU parameters of right and left kidney is a matter of controversy. The aim of this study was to determine whether any difference exists between the DU indices of the right and left kidney before nephrectomy. Retrospectively, we collected DU findings of 25 healthy potential renal transplant donors from October 2004 to July 2008. All patients underwent the renal Doppler ultrasonography (DU) and multi-detector CT angiography (CTA) before donor nephrectomy. DUS indices including peak systolic volume (PSV), resistive index (RI), pulsatility index (PI), end-diastolic volume (EDV) and acceleration time (AT) were recorded. Six donors were excluded from the present study due to the presence of supernumerary renal artery detected by CTA. The data were analyzed by SPSS for Windows version 12.0. The Wilcoxon signed rank test was used to compare the right and left kidney DU indices. All data are presented as mean values +/- SD and p value below 0.05 was considered statistically significant. Nineteen renal transplant donors were included in the current study. The mean age of donors was 28.4 +/- 3.7 years. The mean PSV, RI, PI, EDV and AT for the right kidney were 29.83 +/- 8.18, 0.58 +/- 0.04, 1.04 +/- 0.16, 11.85 +/- 3.58 and 52.52 +/- 12.44, respectively. For the left kidney, the mean PSV, RI, PI, EDV and AT were respectively as 33.63 +/- 12.42, 0.59 +/- 0.05, 1.02 +/- 0.18, 13.76 +/- 5.92 and 49.15 +/- 13.26. Statistical analysis revealed no significant difference between the right and left kidney DU parameters (p>0.05, Wilcoxon signed rank test). In conclusion, in contrast to a variation previously found for PSV between the right and left kidneys, the present study revealed that the right kidney DU indices may not differ from those of the left kidney.
P-79
HOW TO MANAGE UROLOITHIASIS IN TRANSPLANTED KIDNEYS: A REVIEW ARTICLE

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Management of urinary lithiasis in solitary kidney patients is difficult. There are also difficulties in management of patients with ectopic kidneys. Kidney transplanted patients, however, have both problems. We reviewed articles in this matter to find the best approach for management of such cases. We reviewed articles submitted in MEDLINE from 1996 till 2007 for Incidence etiology and management of uroloithiasis in transplanted kidneys. Then we reviewed results and conclusions of these articles and risks and benefits of each approach. Results: 51000 transplanted kidneys in 50 articles reviewed. Incidence of uroloithiasis was very variable (average 1.7%) and in the United States it was 104/100000 annually in one report. Location of stones according to frequency was kidney, ureteral and bladder respectively. There are several treatment modalities as follows: medical treatment for small stones, watchful waiting for small non symptomatic patients, treatment of stones at donor kidney, treatment for patients with anuria or hydronephrosis with any kind of diversion and treatment for elective patients. For stones at donor graft SWL is recommended before donation and bench surgery is the other modality. For elective patients SWL is first line treatment at most centers. PCNL is the second line treatment modality and flexible ureteroscopy and in situ lithotripsy by pneumatic or Holmium laser was the last modality. Open surgery is rarely indicated.

P-80
HYPOMAGNESAEAMIA IN RENAL TRANSPLANT RECIPIENTS RECEIVING CYCLOSPORINE WITHOUT HYPOCALCAEMIA AND HYPOPHOSPHATEMIA

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Hypomagnesaemia has been implicated as a contributor to the cyclosporine toxicity. Some patients treated with cyclosporine develop hypophosphatemia and hypocalciuria.

Methods: Serum magnesium level were measured in 157 (62 female and 95 male) renal transplant recipients for correlation with cyclosporine level. Patients were divided in two groups, a low mg and a normal mg group based on the mean mg level. Others blood chemistries in cluded serum Creatinine, calcium and phosphate. Hypomagnesaemia was detected in 10.2% recipient patient. The mean cyclosporine level were significantly higher in the hypomagnesaemia (510.28 ± 23) than normomagnesemia group (354, 87±181), (P=0.002). Mean age of hypomagnesaemia patients was 50.7±12.47 years and that of patients with normomagnesemia was 42.9±12.1 years (P=0.02). Neither assays correlated with serum calcium and phosphate ( P=0.6 and P=0.9 respectively). According to the results of this study there is significant correlation between cyclosporine and hypo magnesium. Therefore it is recommended that serum level of magnesium be monitored regularly in renal allograft recipients’ receiving cyclosporine.
P-81
PULMONARY ASPERGILLOSIS IN SOLID ORGAN TRANSPLANT PATIENTS: A REPORT FROM IRAN

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Background. Aspergillosis is one of the most important opportunistic infections after organ transplantation. Early diagnosis and initiation of appropriate antifungal therapy are key factors for better prognosis. Aims. In this study, we report our experience with invasive pulmonary Aspergillus infections in Lung, heart and kidney transplant recipients, in our institution and examine the risk factors associated with this complication and outcome of treatment. Methods. We reviewed the medical records of patients with solid organ transplantation with evidence of Aspergillus infections in National Research Institute of Tuberculosis and Lung Disease in Iran from December 2001 to January 2008 and evaluated patient’s demographics, the time of onset after transplantation, risk factors, radiologic appearance, diagnostic criteria, antifungal therapy and outcome. Results. We found Aspergillosis in eight lung, three kidney and one heart recipients, with a mean age of 40.6 years. Seven cases of Aspergillus tracheobronchitis were diagnosed in lung transplant recipients, all of them in the first six months after transplantation. All patients responded to antifungal therapy and Bronchoscopic debridement. We found five cases of invasive pulmonary Aspergillosis. Three of these patients survived with response to antifungal treatment. Two patients who died had been treated with combination of Itraconazole and Amphotericin B. All cured patients had been treated with Voriconazole alone or in combination with Caspofungin. Conclusions. It seems that the prognosis of Aspergillosis in solid organ recipients is improving with new treatment regimens particularly if they are used in early stages of infection.

P-82
USING OLDER DONORS TO EXPAND DONOR POOL

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In the recent past, chronologic age was a contraindication both for organ donation and transplantation. But, the rapidly growing number of patients with end-stage renal disease are increasing everywhere in the world. Moreover the extreme organ shortage in Turkey has been leading us to use expanded living or diseased donor. We retrospectively analyzed Gazi University Medical Faculty transplantation registry and patient data to determine old donor’s outcome. Since 1996, totally 193 renal transplantations were performed to 191 renal recipients. Sixty out of 193 were from deceased, 133 were from living donor. Totally 25 (7.7%) out of 193 donors were at the age 55 years old or older. In this group 15 out of 25 donors were from living, rest of were from diseased donor. Mean cold ischemia time was 4.5 hours (range, 1–24 hours). The immunosuppressive protocol consisted of induction therapy (Simulect 20 mg days 0 and 4) and triple immunosupresion (calcineurin inhibitors, mycophenolic acid and steroids). Mean hospitalization time was 25 days (range, 9–35 days). Nine patients (3.6%) presented DGF requiring transitory hemodialysis. One patient lost her graft due to BK infection. None of the recipients or the grafts was lost due to any surgical complications. We have seen 3 acute rejection episodes. All were reversed by pulse steroid. Although 4.2% of recipient had DGF, it did not affect graft outcome respectively. Mean creatinine levels for 1 and 3 years were 2.1 and 2.3 respectively. Patient and graft survival for 1, 3, 5 years are 100%, 96%, 86% and 100%, 96%, 82% The use of old (>55 years old) donor kidneys may associated with worsen renal function and reduced graft survival compared with standard donors. Kidney transplantation from old donors should be considered as option for kidney transplantation.
HEPATITIS B IMMUNOGLOBULIN AND LAMIVUDINE FOR HEPATITIS B PROPHYLAXIS AFTER LIVER TRANSPLANT

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Recurrence of hepatitis B virus after a liver transplant is a major risk factor affecting graft and patient survival. Short-term (i.e., 1-2 years) hepatitis B virus reactivation rates after liver transplant range between 3% and 15%. Using combination prophylaxis, outcomes of liver transplant in patients with liver disease related to hepatitis B virus have been improved to levels comparable to those patients whose disease is not related to hepatitis B virus. Since September 2001, 238 liver transplants have been performed in 234 patients at our center; of these, 65 had liver failure related to hepatitis B virus, and 40 were followed for more than 12 months. Their outcomes were analyzed retrospectively. Our protocol includes lamivudine (100 mg orally per day beginning the day after surgery) and hepatitis B immunoglobulin (10 000 IU IV during the anhepatic phase, 2000 IU/day IV during the first week after surgery, 2000 IU IV/month from the first to the 12th postoperative month). Using our protocol, the anti-HBsAb serum titer was maintained at approximately 100 to 150 IU/mL. The female: male ratio was 9:31. The mean age of patients was 43±13.1 years. Four patients died of causes unrelated to hepatitis B virus 13, 15, 23, and 30 months after liver transplant. At the time of death, their hepatitis B surface antigens (HBsAg) were negative, and serum titers of anti-HBsAb were 35.3, 56.4, 79.6, and 123 IU/mL. Mean 31.5 ± 13.1 months. The HBsAg became positive 15 and 18 months after liver transplants in 2 patients; the remaining 34 patients had negative evidence of HBsAg. In 16 patients, serum titer of anti-HBsAb was 0; in the remaining 18 patients it was 69.2 ± 133 IU/mL. In conclusion; our combination protocol with hepatitis B immunoglobulin and lamivudine is a safe and effective treatment for hepatitis B virus prophylaxis after liver transplant.

QUALITY OF LIFE AND SCHOOL PERFORMANCE AFTER LIVER TRANSPLANTATION IN CHILDREN

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Liver transplantation is a procedure that can save and prolong the life of children with end-stage liver diseases. The aim of this study is to evaluate the quality of life and school performance of children who underwent liver transplantation. In this prospective study we evaluated 48 children (18 girls, 30 boys) with a mean age of 9.6 years (range: 1-18 year) who were alive at least one year after transplantation. The data was collected using a standard questionnaire filled by patients or their parents. Ninety-three percent of patients were alive one year after liver transplantation, and 68.7% of them had normal playing activity with their peers in the same age group. Out of 25 children who were at school age, 84% went to the school with good school performance, 64.6% of patients believed that they will have a normal life in the future and can get married. In this study we observed that the impact of transplantation on recipients’ quality of life is dramatic. The goal of liver transplantation is not only to ensure survival, but also offer patients the sort of healthy life they enjoyed before the disease, achieving a good balance between the functional efficacy of the graft and the patients' psychological and physical integrity.
NEW ONSET DIABETES MELLITUS PRESENTING WITH DIABETIC KETOACIDOSIS AFTER PEDIATRIC LIVER TRANSPLANTATION

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The development of new-onset diabetes mellitus (NODM) is a common metabolic complication after liver transplantation. Presentation of post liver transplant diabetes mellitus with diabetic ketoacidosis (DKA) is rare especially among pediatric patients. We reported three pediatric patients (1 girl, 2 boys) who presented with DKA after liver transplantation. The underlying diseases leading to transplantation were cryptogenic liver cirrhosis, Wilson disease and congenital hepatic fibrosis. None of the three patients had history of diabetes prior to transplantation and all of them were cases of NODM after transplantation. All three patients presented with severe hyperglycemia, significant ketosis and metabolic acidosis of variable severity. All three patients received tacrolimus as one of the immunosuppressant agents. All of the three patients received liver transplant from a deceased donor. Viral markers for HBV and HCV infection were negative in three patients. Two patients treated with subcutaneous insulin injection, but one case expired in intensive care unit due to sepsis and chronic rejection. Our experience suggests that post-transplant diabetes mellitus may result in ketoacidosis either secondary to relative beta cell dysfunction, peripheral insulin resistance, or a combination of the two effects. Finally we emphasize on paying more attention to glucose metabolism and risk of diabetes mellitus in patients with immunosuppressive therapy, especially tacrolimus.

POST LIVER TRANSPLANTATION FOLLOW-UP OF LIBYAN LIVER RECIPIENTS AT HEPATOLOGY CLINIC OF ORGAN TRANSPLANTATION PROGRAM

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In most transplant centers, transplant surgeons manage the immediate post-operative care; hepatologists are responsible for the long-term post-transplant follow-up. We aimed to evaluate the outcome of all patients who were on regular follow-up at our hepatology clinic for the organ transplantation program. We reviewed files of liver transplant recipients who underwent living liver transplantation at our surgical department, and those who had transplanted abroad before the introduction of our living liver transplantation program. Evidence of rejection, recurrence of the primary disease, and co morbidities were examined. A total of 27 recipients were registered from January 2006 through October 2007, 52% were females. Liver transplant was from live donor in 16 recipients, and from cadaver donor in 11 recipients. Surgery was undertaken in different countries (7 in Libya, 20 in other countries). The underlying liver diseases for which liver transplantation was indicated in children were (2 cases of Byler disease, 2 extra hepatic biliary atresia, 2 congenital liver fibrosis, 1 tyrosinemia), and in adults were (5 hepatitis C, 4 hepatitis B, 4 primary sclerosing cholangitis, 2 primary biliary cirrhosis, 2 Wilson disease, 1 autoimmune hepatitis, 1 alcoholic cirrhosis, 1 cryptogenic). 3 patients died within nine months of surgery. 24 recipients are on regular follow up, mean age was 36.6 (range: 2-61) years, post operative duration of 1-19 years (mean 4 years), 6 patients experienced early rejection which was treated successfully, 2 patients developed chronic rejection. Recurrence of the primary disease occurs in 9/24 (37.5%) patients (4 hepatitis C, 2 hepatitis B, 2 primary sclerosing cholangitis, 1 autoimmune hepatitis), immunosuppression was Tacrolimus based in 17/24(71%) recipients, diabetes mellitus developed in 3 patients. In conclusion, among adult Libyan liver recipients, hepatitis C is the most common indication for liver transplantation with a high recurrence rate. Drug related diabetes mellitus occured in Tacrolimus based immunosuppression.
OUTCOME OF LIVER TRANSPLANTATION IN PATIENTS WITH PORTAL VEIN THROMBOSIS: A SINGLE CENTER EXPERIENCE

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Portal vein thrombosis (PVT) has been mentioned as a potential obstacle to liver transplantation (LTx). The present study was conducted in an effort to review the impact of PVT on LTx outcome. Between June 2006 and July 2008, 253 OLTs were performed in Shiraz transplant unit including 25 cases (9.9%) showing PVT. Data were retrospectively collected regarding the demographics, indication for liver transplantation, Child-Turgot-Pugh classification, pretransplant diagnosis of PVT, perioperative course and managements, relapse of PVT, early postoperative mortality and morbidity. All patients received livers from deceased donors, were undergone thromboendvenectomy with end-to-end anastomosis without interposition graft and evaluated daily for 5 days and after that biweekly by duplex sonography during the follow-up period for 2 months and treated by therapeutic dose of heparin followed by warfarin to maintain INR between 2 to 2.5. The cause of end stage liver disease was hepatitis B in 10, cryptogenic cirrhosis in 7 and other causes in 8. Thrombosis was partial in 16 and near-complete in 9 patients. Extension of thrombosis was through confluence of superior mesenteric and splenic vein in 22 and to superior mesenteric vein in 3 patients. The mean operative time was 7.25 ± 1.27 hours. The transfusion requirement was 5.76 ± 3.28 units packed cell. The mean duration of hospital stay in these patients was 17.72 ± 10.95 days. The mean follow-up period was 11.08 ± 8.74 months. We had 7 mortality cases including 1 early in-hospital PVT and 1 hepatic vein thrombosis, and 1 from in-hospital ischemic cerebrovascular attack despite full anticoagulant therapy. The overall morbidity was 32%. We had no relapse of PVT in the other patients. The presence of PVT at the time of OLT is not a contraindication for OLT but patients with PVT and facing more difficult surgery, have more postoperative complications, and have higher in-hospital mortality rate.

HYPERTROPHIC CARDIOMYOPATHY AND NON HODGKIN LYMPHOMA IN A CHILD AFTER LIVER TRANSPLANTATION

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Calcineurin inhibitors have dramatically improved the outcome of solid organ transplantation, but side-effects of these immunosuppressive medications have included nephrotoxicity and in selected patients, cardiac toxicity. Here, we report a 1.7 years old infant with tyrosinemia that developed hypertrophic cardiomyopathy (HCM) and non Hodgkin lymphoma after liver transplantation. The patient was on tacrolimus as immunosuppressive medication. About 5 months after transplantation, the patient presented with prolonged fever and diarrhea and cough. Physical examination revealed a child with respiratory distress and multiple cervical and submandibular lymphadenopathies. The patient also had severe ascites and scrotal edema. The initial laboratory test revealed: WBC: 5000/ mm3, RBC: 2110000/ mm3, platelet: 28000/ mm3, Hb: 4.8 mg/dl. Tacrolimus level was 32.1 ng/ml. Bone marrow biopsy was showed hypocellularity and in bone marrow culture growth of Streptococcus Pneumoniae was observed. Cervical lymph node biopsy revealed non Hodgkin lymphoma. Echocardiography showed severe mitral regurgitation and mild aortic insufficiency and septal hypertrophy. The ejection fraction was 8%. The echocardiographic findings were in favor of HCM. Abdominal color Doppler sonography was normal except for dilatation of common bile duct and dilatation of portal vein. Tacrolimus was switch to sirolimus and the patient underwent chemotherapy with cyclophosphamide, vincristine, methotrexate and leukovorin. Unfortunately these medications were not helpful and the patient developed severe gastrointestinal bleeding and expired at the 46th day of his admission. This case is another document that introduces tacrolimus as responsible for development of HCM in children.
QUALITY OF LIFE AFTER LIVER TRANSPLANTATION

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Quality of life (QoL) has become a major focus after liver transplantation (LTx), since survival rates have improved dramatically over the past two decades. The EORTC QLQ C30 plus a liver transplant specific module were used to analyze QoL in 123 liver recipients (age 56.7±13.1 years; 70 male, 53 female) transplanted from 08/1992 to 06/2007. In addition, 40 listed patients awaiting LTx were included into the analysis. Uni- and multivariate analyzes was performed using SPSS13.0. The overall QoL in the liver recipient group was slightly but not significantly worse compared to a reference group of healthy individuals. However, the Global Health component of QoL in this group was better than in the group of waiting list patients (62.8±25.0 vs 52.1±26.5). This difference is statistically not significant due to the small number of waiting list patients, but might be considered as clinically significant. In comparison of the different primary diseases, post alcoholic cirrhotics had the same QoL as cholestatic patients. QoL was significantly decreased in patients with a liver retransplantation (re-LTx). In Conclusion, after establishing a system of continuous and systematic QoL assessments we report these results in combination with our survival results. Further research has to focus on advanced methodology of statistics combining these two major outcome parameters (quality of life and survival). Furthermore, the influence of medical parameters like co-morbidity or immunosuppression needs to be established on QoL.

OXYGEN-CHALLENGE TEST IN BRAIN DEAD PATIENTS

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Oxygen-challenge test is an essential screening test for lung transplantation. The test is applied to brain dead patients and further evaluation of the patients for appropriateness of their lungs for organ harvest depends on having an acceptable result. The aim of the current study is to evaluate the status of the oxygen-challenge test in a group of brain death patients in Iran. We used the brain death database of the Organ Procurement Unit of Shaheed Beheshti University of Medical Science. Information about patients with brain death from X hospitals is registered in this database. Based on international criteria, an oxygen-challenge test result of more than 400 mm Hg is ideal, 300-399 is good and 200-299 is borderline for lung transplantation. A result of less than 200 is not suitable for lung donation. We used described the result of Oxygen challenge test. The mean oxygen-challenge test result was 266.6 ± 85.6 mmHg (range: 110 to 460). Regarding the specified cut-points; 6.7% of cases were ideal, 26.7% were good and 40% were borderline. Test result in 26.7% of the patients was not acceptable. In our study, more than 66% of brain dead patients have unacceptable or borderline results and only a small group of patients had ideal results for lung transplantation.
ANESTHETIC MANAGEMENT OF HEART TRANSPLANTATION: OUR EXPERIENCE WITH EARLY 27 PATIENTS

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Although the basics of anesthetic management in heart transplantation are well-known, the practical approach differs with the experience and available technology in-hand. The purpose of this study was to assess our early anesthetic experience and to raise future directions in heart transplantation operations. Twenty-seven patients who were underwent heart transplantation from 2003 to 2008 were retrospectively evaluated from anesthetic and surgical charts. Patients’ characteristics potential to have impact on anesthetic management as well as early postoperative outcome were recorded. Average age was 31.5 ± 21.2 years and average body weight was 58.6 ± 17.4 kg. Anesthetic technique included induction with midazolam, fentanyl and etomidate followed by maintenance with isoflurane, air/O2 and fentanyl infusion. One patient was underwent both heart and kidney transplantation and another was performed heart transplantation and coronary artery bypass surgery at the same operation. Preoperatively, 17 patients had poor ventricular function, 15 had pulmonary hypertension, 5 had internal cardiodefibrillator device and 3 had intracardiac thrombi. Besides standard invasive monitoring, pulse contour cardiac output measurement device was used in three patients and pulmonary artery catheterization was performed in five. As critical events noted, one patient developed cardiac arrest at induction and resuscitated. There were not any major events other than minor transient hemodynamic changes in other patients. Ultrafiltration was performed in 22 patients with an average of 119 ± 1311 mL. Intraoperative use of packed red blood cells and fresh frozen plasma were 2.8 U ± 1.4 U and 3.4 ± 2.6 U respectively. Total ischemic time was 218 ± 82 minutes. Lactate level at the end of surgery was 4.5. In the postoperative period, rhythm problems were observed in 4 patients, 17 patients required renal replacement therapy and 5 patients had revisions due to bleeding. There were no operative mortality; in-hospital mortality was 11% (3 patients). Our findings demonstrate that patients undergoing heart transplantation operations constitute high-risk for anesthetic management. Construction of standard institutional protocols may provide better evaluation and safer operative follow-up.

ANESTHETIC MANAGEMENT OF HEART TRANSPLANTATION: REPORT OF 15 CASES

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Heart transplantation is the definitive therapy for end-stage heart failure. This retrospective study included 15 heart recipients aged 25 to 56 in Dr. Masih Daneshvari Hospital, Tehran, Iran over a 2- year period from April 2006 to July 2008. Patients suffered from dilated cardiomyopathy (n=7) or ischemic cardiomyopathy (n=8) with ejection fraction 10November to 20November. Cases with NYHA class V, IV and I symptoms were 2, 10 and 3, respectively. Six patients had to receive inavenous inotropic therapy before surgery. Two patients had a median sternotomy from previous cardiac surgeries. Anesthesia was induced with a narcotic-based technique (fentanyl - midazolam 9, fentanyl-midazolam-ketamine 6) and maintained in pre bypass period with isoflurane-remifentanyl – midazolam (n=2), propofol-remifentanyl (n=7), fentanyl- midazolam (n=5), and propofol- fentanyl (n=1) as well as muscle relaxants (atracurium, cisatracurium, or pavulon). Rapid sequence induction was performed in 6 recipients. Hemodynamic instability at anesthetic induction was minor in all patients. The ischemic time was 1 to 2.25 hours and time on CPB was 87-220 minutes. The cardiovascular support was necessary in all patients for weaning from CPB. Prostaglandin E1 was given to one patient. Twelve patients were successfully separated from the CPB and three intraoperative deaths were observed. After transportation to ICU all recipients needed inotropic support. The recipients remained intubated for 9-100 hours after surgery. One death occurred on the 12 th posttransplant day due to acute rejection. No mortality was related to anesthetic management. The average hospital stay time was 17.18 ± 5.68 days. Eleven patients recovered and discharged from the hospital. Anesthetic management of patients undergoing heart transplantation is a challenge for anesthesiologists during the prebypass period as well as during the weaning and early post bypass periods.
COST OF ORTHOTOPIC LIVER TRANSPLANTATION IN IRAN

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Orthotopic liver transplantation (OLT) is a highly effective therapy for end-stage liver disease. However, this is a highly complicated and expensive procedure that puts much pressure on the health system in developing countries. We report OLT cost in a new established transplant program in Tehran, Iran. Cost information was obtained from the records in the liver transplant clinic and hospital bills. All data regarding the cost of being in waiting list, hospitalization, donor and recipient procedures, post-operative care and immunosuppression up to 1 year following OLT were included. All costs were converted into US dollars (1 USD = 9000 Rials). The total cost of OLT was about $55555. Of this, 2% was related to the cost in waiting list, 10% to the organ procurement, 2% to the recipient procedure, 6% to the hospitalization, 34% to the medical staffs, 2% to the follow-up care up to 1 year, 40% to the specific drugs including immunosuppressive therapy up to 1 year, and 4% to others including accommodations. The cost of OLT in Iran is about one third of its cost in western countries. The health system also pays for most of the expenses. These, along with full medical insurance coverage of immunosuppressive drugs, make OLT more available for patients regardless of the socioeconomic status. It is expected that a higher number of patients with low socioeconomic status will be candidate for OLT.

ISOLATION AND RAPID EXPANSION OF HUMAN MESENCHYMAL STEM CELLS FROM BONE MARROW

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Human mesenchymal stem cells (hMSCs) are adult stem cells with multipotent capacities. The ability of hMSCs to differentiate into many cell types, as well as their high ex vivo expansion potential, makes these cells an attractive therapeutic tool for cell transplantation and tissue engineering. One source of hMSCs in adult individuals is the bone marrow, where they are immersed in the stroma at a low frequency. Isolation of these cells requires in vitro experimentation and characterization based on immunophenotyping or functional traits. Human bone marrow of healthy donors was aspirated from the iliac crest. Mononuclear cells were layered over the Ficoll-Paque density-gradient and plated in tissue cultures dish. Following removal of non-adherent cells 1–4 days after the establishment of the culture, cells are maintained with periodic passages until a relatively homogeneous population is established. The identification of adherent cells was performed by flow cytometry analysis. The cells were analyzed for the expression of CD34 (Hematopoietic marker), CD11b (Compliment receptor), CD31 (Platelet-Cell Adhesion Molecule), CD45 (Leukocyte Common antigen), CD105 (Endoglin), and CD73 (SH3/4). The in vitro differentiation of hMSCs into osteoblast and adipocytes was also achieved. Results: At the third passage, hMSCs were CD34, CD11b, CD31, and CD45 negative because antigen expression was less than 5%, while they showed a high expression of CD105 and CD73. The differentiation of osteoblasts is determined by deposition of a mineralized extracellular matrix in the culture plates that can be detected with Alizarin Red. Adipocytes are easily identified by their morphology and staining with Oil Red. Discussion: All these data suggest that MSCs can be isolated and expanded from most healthy donors, providing for autologous source of stem cell transplantation. In addition we have defined we have defined culture conditions under which hMSCs can be amplified about 108-fold in 6 weeks.
P-95
PRELIMINARY RESULTS OF SCHWANN CELL TRANSPLANTATION FOR CHRONIC SPINAL CORD INJURIES

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Schwann cells are the main supportive cells in the peripheral nervous system having the potential to promote neurite growth in the central nervous system provided they reach sufficient cell purity (>95%) compared to oligodendrocytes. Schwannosis as a known post-traumatic phenomenon has a limited capacity to provide injured spinal cord with enough neuroplasticity. In this study autologous Schwann cells were surgically introduced within the medullary syrinx in 33 cases of chronic post-traumatic myelopathies. Thirty three cases of chronic spinal cord injuries (>2 years) visited on outpatient neurosurgical clinic of Brain And Spinal cord Injuries Repair research center (BASIR) were selected for treatment having Frankel grading A and B and informed consent for the procedure of autologous Schwann cell transplantation. The inclusion criteria were; age <50 years, no ferromagnetic metallic implant artifact on MRI, spinal cord lesion size less than 10 mm, non-atonic bladder on cystometrographic studies, competent muscles and nerves in the affected limbs as checked by electrodiagnostic study, and passing a course of six month rehabilitation and physical therapy. The neurological status was recorded just before surgery by ASIA and FIM grading scores. Autologous sural nerves were harvested from the lower limb as monitored care surgical procedure. The nerve was cleaned of epineurium and cut into pieces for cell culture. The cell viability and purity was ensured prior to transplantation. The level of the intramedullary syrinx was defined on high resolution pre-operative MRI. The corresponding spinal level was ascertained by intraoperative imaging. Intra-operative neuronavigation was employed to ascertain the intramedullary bubble position if necessary. The operation was performed through a 3-cm incision and small hemilaminectomy and durotomy. The cell rich suspension was injected within the syrinx. Post-operatively, they received steroids and antibiotics for 1 day and discharged on the second day. The patients rested for two days in both prone and supine positions to promote even cell distribution within the syringal wall. The patients were ambulated on the third day and rehabilitative therapy was begun after one week. The motor, sensory and sphincter status were assessed by force gauge, pain threshold and neurological level, and dry intervals respectively on a regular basis and recorded. Sexual function was recorded as a personal report of feelings, and appearance of psychogenic erections. All patients had a magnetic resonance imaging 3 month post-operatively being clinically assessed at 3 month intervals up to one year Results: After at least 12-month follow-up period all patients were doing well without any new complaints. Transient headache and local and funicular pain were the most common complications. Control MRI did not reveal any neoplastic growth. Mean postoperative FRS differed significantly from the preoperative values (P<0.05). There were no cases of neurological worsening, infectious or viral complications. Paresthesia and tingling were the first sensations reported by the patients within the first week after surgery, followed by increased automatic activity. Thereafter, sensory level descended and motor function improved significantly when compared to pre-operative status. In the cervical lesions this happened in distal muscles while in thoracolumbar region proximal muscles showed improvement at the beginning. Discussion and Conclusion: Recent studies have declared that the microenvironment of the injured segment of the spinal cord is an obstacle for successful reparative process in the proximal and distal directions. The precise mechanism appears to be partly related to decreased c-AMP in the terminal neurites at the injury site. Possibly central myelin is the main culprit for neurite growth inhibition and collapse via decreased protein kinase activity. Peripheral myelin derived from Schwann cells on the other hand has a promotive effect on the neurite growth by inhibiting the NOGO receptors and increasing intracellular CAMP. The results of our study show that the procedure of intramedullary cell transplantation has been safe during the 12 month follow-up period. Also it has promoted the sensory and motor status of the patients. The bladder and bowel functions also show improvement as well as sexual function. The tissue employed is harvested from a sterile surgical wound and autologous; therefore the chance for bacterial infection, blood borne viral infections, and graft rejection is minimal without necessity of immunosuppressive therapy. The maturity of the employed tissue and avoidance of mutagens in the tissue culture protocols nearly obviated the possibility of in situ tumorigenesis. Although the establishment of the effectiveness of cell therapy for treatment of spinal cord injuries requires larger series and trials with prolonged follow-up, preliminary results seem to be promising for the treatment of this malady.
P-96

REHOSPITALIZED RENAL RECIPIENTS SHOULD BE REASSURED ABOUT THEIR HIGH SURVIVAL PROBABILITY

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Although post-renal transplant rehospitalization and the concomitant bleak outlook on life are prevalent, there is a paucity of information in the existing literature on the long-term survival rates of rehospitalized kidney transplant recipients. Believing that this is the likely culprit for the medical community’s occasional failure to provide this group of patients with promising information and reassurance about their future, we sought to assess long-term patient and graft survival after nonfatal rehospitalization in renal recipients with a normal graft function. Our review of the follow-up data of 253 kidney transplant recipients who had been discharged from rehospitalization with a normal renal function sometime between 2000 and 2003 revealed patient and graft survival rates at intervals of 6 months and 1, 2, and 5 years of 98%-88%, 97%-82%, 95%-77%, and 93%-63%, respectively. Our acceptable patient and graft survival rates can be utilized by health care professionals to combat rehospitalized renal recipients’ groundless fears and thus improve their quality of life by offering them reassurances.

P-97

EXTENSIVE SINONASAL AND ORBITAL ZYGOMYCOSIS AFTER HEART TRANSPLANTATION; THE FIRST REPORT OF A RARE COMPLICATION FROM IRAN

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Zygomycosis is an opportunistic fungal infection mainly involving patients with diabetes mellitus, immunodeficiency, and malignancies. The majority of cases reported as a post-transplant complication has been following renal or liver transplantation. Among those complicating heart transplantation, rhino-sinusitis and orbital mucomycosis comprise a little portion. A 38-year old heart-transplanted diabetic man returned to the transplant follow-up Clinique, 20 days after his successful operation with unilateral periorbital swelling, nasal discharge, and multiple cranial nerve dysfunctions. Multidisciplinary investigation and consultations resulted in detection of mucormycosis in paranasal sinuses and the orbital space, as well as complicating thrombosis of cavernous sinus. Surgical ablation of infected parts, along with antifungal regimen and adjustment of immunosuppressive maintenance was taken. Extension of craniofacial involvement was ceased as a result and allograft function remained undisturbed. Early detection of opportunistic infections in transplanted patients plays a great role in preventing from dissemination. Fungal infections, including zygomycosis, should be thought in recipients especially those carrying risk factors such as diabetes or who present with local unusual manifestations. Sinonasal and orbital mucormycosis, if diagnosed on-time, can be managed well to reduce mortality. Although devastation of one side facial and ophthalmic structures was inevitable in this case, the overall outcome was acceptable.
INCIDENCE AND OUTCOME OF CMV-INFECTION IN THE NEWEST CARDIAC TRANSPLANT ERA


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Cytomegalovirus (CMV) is a significant cause of morbidity and mortality in heart transplantation. However new diagnostic tools (CMV-PCR) as well as new treatment options (valgancyclovir) have been adopted in clinical practice. The aim of this analysis was to evaluate the incidence of CMV infection and disease in the newest era between 2002 and 2008. We studied 201 heart transplant recipients who received quadruple-immunosuppressive therapy. The study population was categorized into 4 groups according to donor and recipient CMV serology at the time of transplantation (D-/R-, D-/R+, D+/R-, D+/R+) and was monitored by quantitative CMV-PCR blood tests. CMV infection was defined as increase of CMV-PCR results ≥1000cps/ml. CMV disease was defined as CMV infection with clinical symptoms. All patients received CMV Ig and CMV-high risk patients (D+/R-) received prophylaxis with valgancyclovir for three months. The incidence of CMV infection and CMV disease was analyzed among the four groups. During the first year after transplantation, CMV infections and disease developed in 61 (30.3%) and 9 (4.5%) patients respectively. However, CMV disease rate was very low (9 cases, 4.5%). There was no death due to CMV infection. Comparison among the groups showed significantly different incidence of CMV infection (D-/R-: 2.3%, D-/R+: 32.5%, D+/R-: 23.5%, D+/R+: 47.5%, p<0.05) and CMV disease (D-/R-: 0%, D-/R+: 2.3%, D+/R-: 11.7%, D+/R+: 5%, p<0.05). Average time to CMV infection was longer in the D+/R-: 22.4±14.8 weeks vs. 6.7±12.2 weeks in the other groups. In the D+/R- group, CMV infection occurred after the end of CMV prophylaxis. In all cases of CMV infection, PCR levels decreased after start of therapy. There were no gancyclovir resistant CMV infections. In the era of new CMV diagnostic and therapeutic options, CMV infection is diagnosed earlier and therapy can be started before CMV disease occurs. This approach can reduce morbidity and mortality due to CMV infection.

DIAGNOSIS OF TOXOPLASMOSIS IN A SERONEGATIVE AND TREATMENT-RESPONSIVE HEART TRANSPLANT RECIPIENT

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Toxoplasma gondii infections in heart transplant recipients are generally seen as acquired infections of the immunocompromised sero-negative patient from an exogenous source, usually the donor organ. We report a 19-year-old heart transplant recipient who developed a collapse of heart functions, 28 days after the transplantation. Histopathological examination of the endomyocardial biopsy revealed T. gondii infection. After the appropriate medical therapy regimen, the patient’s ejection fraction recovered dramatically. The control endomyocardial biopsy of the patient revealed any histopathologic sign of T. gondii infection or acute rejection. In both preoperative and postoperative serologic tests of the recipient, T. gondii IgG values were negative. Although a seroconversion of T. gondii IgG/M was not detected, a twofold rise was significant in the titer of IgG. Unfortunately the serologic status of the donor was not known, but the recipient of liver of the same donor is known to have an infection-free course. However, the heart transplant recipient died on the 65th day of transplantation because of other reasons. Our case demonstrates that the histological diagnosis of T. gondii is precious for recovery. In conclusion, T. gondii infection should be kept in mind while interpreting endomyocardial biopsies of transplanted heart. It is significant to distinguish its histopathologic symptoms from a possible rejection because the therapies of these two entities are completely different and depends on the pathological diagnosis.
**P-100**

PROGNOSIS OF HTLV-I–POSITIVE RENAL TRANSPLANT RECIPIENTS IN IRAN

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The Human T Lymphocyte Virus 1 is the responsible pathogen for some diseases including HTLV-1 associated myelopathy (HAM) and adult T cell leukemia (ATL). Mashad in northeast Iran, with high instances of this infection, shows noticeable number of infected renal failure patients. Since Immunosuppressive drugs might decrease the latency period of HTLV1 or increase its complications; the question arises of whether HTLV1 positive renal failure patients are suitable candidates for kidney transplants. To answer this, HTLV1 positive recipients were followed up in our study. Two groups of patients were considered. First: patients at the Imam Reza Hospital dialysis center. Secondly, medical history of 20 kidney transplantation recipients consisting of 10 infected and 10 control recipients (from Imam Reza Hospital kidney transplantation ward). The follow up periods are between one to six years. 6.5 percent of patients under dialysis were infected. The most important fact resulting is that none of the infected recipients suffered from HAM or ATL. To compare the transplant complications, level of creatinine and rate of rejection were assessed too. Overall, our study does not claim significant difference between these two groups. Current information shows that HTLV1 positive patients may undergo kidney transplant without fear of more side effects than uninfected recipients. Because of short-term follow ups, long latency period, and the limitation of the number of infected recipients, further work on this issue would be prudent.

**P-101**

PROGRESSION OF DIABETIC NEPHROPATHY IN SAUDI PATIENTS WITH TYPE 2 DIABETES MELLITUS

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The objective is study of the progression of diabetic nephropathy (DN) among Saudi patients with type 2 diabetes mellitus (DM). This is a prospective cohort study of 35 Saudi patients with biopsy proven DN. A scoring system for the histological severity was developed and assessed blindly. The following parameters were recorded at baseline, and after a mean FU period of 8.2 years: age, gender, GFR (using chromium labeled EDTA, serum creatinine, BMI, urinary protein and serum albumin. The mean age was 60.7 years. There were 20 males and 15 females. The mean baseline EDTA GFR was 43.8 ml/ min +/- 28.8.) And the mean baseline serum creatinine was 165.3 (+/- 115.6). The mean albumin at baseline was 29.4 grams /L (+/-9.8) and the mean proteinuria was 3.4 grams in 24 hours (+/-2.3). Twenty patients (57.1%) required dialysis within two years of follow up. Four patients (11.4 %) died, 9 (25.7%) remained off dialysis with mean serum creatinine of 119.7 umol/L at the end of the follow up period of 8.2 years. Two patients were lost to follow. The factors found significantly associated with progression were higher baseline proteinuria (p=0.01), serum creatinine (p=0.01) and score of histological severity (p<0.001); and lower baseline serum albumin (p=0.001, EDTA GFR (p=0.001) and BMI (p=0.001) and higher. In conclusion, DN due to type 2 DM in Saudi patients has a rapid course. Histological parameters associated with progression were identified. This study involves a small group and the results require confirmation.
THE ROLE OF RENAL AUTOTRANSPANTATION IN TREATMENT OF NUTCRACKER SYNDROME

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The aim is to report our experience with renal autotransplantation in treatment of gross hematuria caused by nutcracker syndrome (NCS). Between September 2005 and January 2008, 4 patients with mean age of 25.5 years (range: 23-28) presented with gross hematuria were diagnosed to have NCS. After history taking and physical examination, investigation included: urinalysis, urine culture, renal function tests, urine cytology, laboratory tests for coagulation disorders, TB, Schistosomiasis, urinary tract sonography, intravenous pyelography (IVP), urethrocystoscopy, colour Doppler ultrasonography (CDUS), scout spiral CT scan, and magnetic resonance angiography (MRA). Abnormal investigating included: isolated hematuria in urinalysis, a bloody efflux from left ureteral orifice in urethrocystoscopy, dilatation of left renal vein (LRV) with significant difference in peak systolic velocity in CDUS and dilatation and compression of LRV between aorta and superior mesenteric artery on MRA. Other work-up were normal. So, left renal autotransplantation was done for all patients. After operation, hematuria disappeared in all patients. No vascular or Urological complication was seen. Follow up ranged from 4 to 24 months. In conclusions, autotransplantation of left kidney is very effective operation for treatment of symptomatic NCS.

NATURE OF HUMAN ENDOGENOUS RETROVIRUSES AND THEIR ROLE IN ORGAN TRANSPLANTATION

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Current data suggest that human endogenous retroviruses (HERVs) elements are active in human cells in a tissue-specific manner. The greatest HERVs activity was found in mRNA prepared from skin, thyroid gland, placenta and tissues of reproductive organs. HERVs are suspected of involvement in some autoimmune diseases, HELLP syndrome, multiple sclerosis, pre-eclampsia, rheumatoid arthritis, psoriasis, atopic dermatitis, melanoma and melanoma cell lines in vitro, systemic lupus erythematosus, Sjogren’s disease, type 1 diabetes and possibility in a wide range of other syndromes. HERVs are remnants of ancient germ line infections with exogenous retroviruses that have been genetically fixed and transmitted in a Mendelian fashion and are suspected of involvement in some human diseases as mentioned above. To investigate the possible role HERVs in human proteome randomly the LTRs of more than 100 HERV have been isolated from genomic DNA and from RNA transcripts and examined their activity using molecular assay such as Micro array, RT-PCR and Northern blotting. The results indicate that a major HERV activity was found in mRNA prepared from skin, placenta, thyroid gland and tissues of reproductive organs. In contrast, only few active HERVs were detectable in muscle cell RNA. A characteristic brain-specific retroviral activity profile was found that consists of members of the class I families HERV-E, HERV F, and ERV9 and members of HERV-K taxa. In addition to these constitutively expressed HERVs, a number of differentially active HERV elements were identified in all brain samples independent of the disease pattern that may reflect differences in the genetic background of the tested individuals. In conclusion human tissues that lack HERV transcription could not be found, confirming that human endogenous retroviruses are permanent components of the human transcriptome. We emphasize for future additional work to studies for this element expression and HERVs mRNA transcription to understand the effective factors for expression HERVs between mentioned diseases disorders population.
**P-104**

**IS THE ANNUAL NUMBER OF DECEASED-DONOR KIDNEY TRANSPLANTATION IN IRAN LOWER THAN THE MIDDLE EASTERN COUNTRIES?**

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Kidney transplantation is accepted as a better treatment for patients with ESRD than long-term dialysis. Mortality, morbidity and cost comparisons are significantly better than dialysis regimens. The major factor limiting transplantation rates is availability of donor kidneys. Deceased donor organ donation is inadequate; hence, the number of patients on the waiting lists is progressively growing in the world. However, in Iran the deceased donor rate has increased over the past 10 years, from less than 1% by the end of year 2000 to almost 16.3% (approximately 311 cases) of kidney transplantations in 2007. Deceased donor kidney transplantation in the Middle Eastern countries and Asia constitute 15 and 10 percent of total kidney transplantation, respectively. Some countries such as Turkey, Kuwait, and Saudi Arabia have a higher percentage of deceased donor renal transplantation than Iran. When we consider the absolute annual number of deceased donor kidney transplants, it reveals that Iran is more likely to benefit from deceased donor renal donations than those countries; because deceased donor kidney transplantation in Iran comprises about 16.3% of the whole annual experience compared to 25%, 30% and 25% in Turkey, Saudi Arabia and Kuwait, respectively. On the other hand, the practice in Iran is about 3 times larger than that of Turkey, which makes Iran having a higher deceased donors per million populations per year. Although the percentage of deceased-donor kidney transplantation in some countries of the region are higher than Iran, but its annual number in Iran is higher than the Middle Eastern countries.

**P-105**

**DUAL KIDNEY TRANSPLANT FROM VERY OLD OR VERY YOUNG DONOR: LONG TERM OUTCOME AND COMPLICATION.**

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The disparity between the supply of cadaveric donors and the demand for organ transplants continues to grow steadily. In the USA, every year 6700 patients (pts) die while waiting for an organ transplant. To increase utilization of cadaveric organs we have recently expanded our acceptable criteria to include very old (VO) or very young (VY) donors. For such donors we transplanted both donor kidneys (Dual Transplant) into a single recipient. The aim of this study is to evaluate the long term outcomes and complications of dual kidney transplants from VO or VY donors. From July 2001 to December 2006, 356 kidney (kd) transplants were performed in our center. 22 pts received a dual ktx. 15 pts (mean age 68, range 60-78) received kds from VO (mean age 72, range 60-79) donors and 7 pts (mean age 47, range 27-72) were transplanted from VY (mean age 17 months, range 2-36) donors. 74% of these kds were imported from outside of our region after being deemed unacceptable by their local center due to the quality (extreme age) of the donor. Three and 5 year pts survival rates were 95% and 82% respectively. Three and 5 years graft (gft) survivals (death censored) were in the VO donors 94% and 94% and 85% and 68% in recipients of VY kds respectively. Mean hospital stay was 6 days in both gps. One pt. (8%) in the VY gp and no pt. in the VO gp experienced acute graft rejection. In the VO gp, one patient experience early graft thrombosis of both kds, three pts experienced ureteral stenosis, one pt. develop urinary leak and one pt developed a lymphocele after tx. Three graft losses occurred in the VY gp: 1 due to lymphoma 11 months post tx, 1 due to HUS 7 mos post tx and one due to early thrombosis on POD 2. Four pts experienced UTI’s and 3 pts developed incisional subcutaneous seroma. Mean serum creatinine at 3 and 5 years were 1.23 and 1.38 mg/dl respectively. Mean eGFR at 3 and 5 years were 56.8 and 55.65 ml/min respectively. Our study showed that using dual kidneys from cadaveric donors that fall outside the general acceptance criteria for kidney donation are a valuable source and can maintain a good eGFR and provide acceptable long term outcomes compared to conventional single kidney transplant when properly placed.
P-106
IMPACT OF RENAL ARTERY MULTIPLICITY ON PATIENT AND ALLOGRAFT SURVIVAL RATES: A SINGLE CENTER EXPERIENCES

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Because of the inadequacy of donors, kidneys previously considered to be unsuitable are nonvascular reconstruction technique, the occurrence of surgical complications, graft function after 1, 3, 6 and 12 month of transplantation, graft loss and the patients’ death. In our center, the prevalence of transplantation with MRA was 3.3%. Mean ages of research subjects and controls were 38.8 and 40.8 years (P = 0.27), respectively. No significant differences were noted in the sex of the recipients, age and sex of the donors, donor source, recipients body mass index (BMI) at the time of transplantation, causes of ESRD, occurrence of complications, vascular reconstruction technique, warm ischemic times, systolic and diastolic blood pressures (after 1, 3, 6 and 12 month of transplantation), number of transplantation and immunosuppression regimens. Furthermore, there were no significant differences regarding GFR between both groups after 1, 3, 6 and 12 months. The mean cold ischemic time in MRA group was significantly higher than control group (21.9 ± 6.6 versus 19.8 ± 6.2; P = 0.007). No significant differences in one year patient and graft survival rates were seen between two groups (P = 0.7, 0.3, respectively). These findings indicate kidney transplantation using grafts with multiple arteries are safe and result in acceptable patient and allograft outcome. Thus, the employ of live donor allografts with MRA is recommended for routine use.

P-107
THE IMPACT OF INSERTION OF DOUBLE J URETERAL STENT ON UROLOGICAL COMPLICATIONS IN RENAL TRANSPLANT RECIPIENTS – A SINGLE CENTRE EXPERIENCE

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This study aimed to retrospectively analyze the impact of routine Double-J stent placement on early urological complications in live related renal transplantation and compared the results with those transplanted without a stent at SIUT. A retrospective study was conducted on 158 patients who underwent live related renal transplantation between 11th December 2007 and 31st May 2008 at SIUT. Based on exclusion criteria 103 patients were selected for the study. These patients were categorized into 2 groups. Group A comprised of patients who received a Double-J stent while Group B contained patients who were stent free. Early urological complications were recorded. Group A comprised of 54 patients (52.4%) of which 39 were males and 15 females whereas Group B contained 49 patients (47.6%) of which 39 were males and 15 females. None of the patients in either group developed a urinary leak. In Group B, 3 patients developed urinary obstruction while no obstruction was recorded in the Group A (p = 0.06). Although 7 patients in group A (12.96%) had a positive urine culture, only 3 patients in Group B developed UTI (p = 0.242). This study suggests that routine placement of DJ stent is unnecessary in renal transplant recipients and its use should be limited to patients with an abnormal lower urinary tract.
ABERRANT ORIGING OF THE GONADAL ARTERY FROM THE RENAL ARTERY: AN ANATOMICAL STUDY WITH POTENTIAL IMPLICATIONS IN THE RENAL TRANSPLANT

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The gonadal arteries are paired vessels that usually originate from the abdominal aorta at the level of second lumbar vertebra. In 5–20% of cases, the gonadal artery has a high origin (superior to L2) and in 5–6% of cases it originates from the main or accessory renal artery. The latter is referred to here as an aberrant gonadal artery. Ninety-eight kidneys of 50 healthy potential renal transplant donors were prospectively studied by conventional angiography. The renal artery, either main or accessory, was detected and individually injected to highlight their perihilar divisions and possible extrarenal branches. The gonadal arteries were recorded if they originated from the renal arteries. We found that 39% (n= 38) of kidneys had at least one accessory renal artery. In 14 sides (14% of kidneys), the gonadal artery (11 right and 3 left) originated from the renal artery, either main (n= 5) or accessory (n= 9). Ten out of 14 kidneys with an aberrant gonadal artery had an associated accessory renal artery. In nine cases, the gonadal artery originated from the accessory renal artery, and in one case, although it originated from the main renal artery, the same kidney had an accessory arterial supply. The results of this study demonstrate that aberrant gonadal arteries tend to originate from kidneys that possess an accessory arterial supply. We hypothesize that aberrancies of the gonadal artery are a part of a common embryologic error resulting in the persistence of the future accessory renal arteries. We believe that this study is the first to hypothesize and study such an association with these arterial anomalies of the renal pedicle. Furthermore, care should be taken by renal transplant surgeons when operating at the renal hilum and handling renal artery to prevent abellingnt injuries to the extrarenal branches originating from the renal artery.

THE EFFECT OF MYCOPHENOLATE MOFETIL VERSUS AZATHIOPURINE ON LONG TERM GRAFT SURVIVAL IN KIDNEY TRANSPLANTATION RECIPIENTS

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The aim of this study was to compare the graft survival after kidney transplantation in recipients treated with azathiopurine (AZA) or mycophenolate mofetil (MMF) and analyze the significance of different risk factors for patient’s survival. A total of 232 patients (132 males and 100 females), with the mean age of 34.5 years transplanted between October 2000 and June 2005, were divided into two groups: patients who received AZA together with cyclosporine A and prednisolone (AZA group, n = 129) and patients who received MMF (MMF group, n = 103) with cyclosporine A and prednisolone. The 3rd and 5th years post transplantation serum creatinine (1.04 & 1.50 for AZA and 0.49 & 0.95 for MMF respectively) were significantly higher in AZA group in comparison to MMF group (sig = 0.031 and 0.26). The increase of serum creatinine between 1st and 5th years post transplantation (0.61 versus 0.23 respectively) also was significantly higher in AZA group (sig = 0.029). The 3rd and 5th year serum cholesterol, triglyceride and uric acid were higher in AZA group too, but the differences were not statistically significant. In conclusion continuous use of MMF versus AZA was associated with a protective effect against declining renal function beyond 3 and 5 year after transplantation. Further study is needed to confirm that continued MMF therapy is protective against long-term deterioration in renal function.
SOLUBLE CD30 AS A PREDICTOR OF ACUTE RENAL ALLOGRAFT REJECTION

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Recent studies suggest that high pre and post renal transplant soluble CD30 (sCD30) levels may be associated with increased acute rejection and graft loss. The aim of this study was to evaluate the feasibility of serum sCD30 for prediction of acute graft rejection. In this prospective study, we analyzed clinical data of 40 patients, whose pre and post transplant (on day 14) serum levels of sCD30 were detected by ELISA. Eight patients (20%) developed acute rejection (AR), 12 patients showed delayed graft function (DGF) and 20 recipients experienced uncomplicated course group (UC) respectively. The patients were followed for 3 months. Preoperative sCD30 levels of three groups were 96.2 ± 32.5, 80.2 ± 28.3 and 76.8 ± 29.8 U/ml, respectively (p = 0.28). After transplantation significant decrease of sCD30 was detected in three groups on day 14 post-transplantation respectively (81.6 ± 30.4, 63.2 ± 28.5 and 55.5 ± 27.7 U/ml respectively, p<0.001), while sCD30 levels of AR group remained significantly higher than DGF and non-rejecting patients (24.3 ± 5.2, 18.1 ± 3.2 and 19.8 ± 4.7 U/ml respectively, p=0.02). Positive Panel reactive antibody (PRA) was not statistically different among groups (p=no significant). Also hemodialysis did not affect sCD30 levels (p=no significant). Receiver operating characteristic (ROC) curve demonstrated that sCD30 level on day 14 post-transplantation could differentiate patients who subsequently suffered acute allograft rejection from others (area under ROC curve 0.95). According to ROC curve, 15 U/ml may be the optimal operational cut-off level to predict impending graft rejection (specificity 93.8%, sensitivity 83.3%). In conclusion, measurement of soluble CD30 on day 14 post-transplantation might offer a noninvasive means to recognize patients at risk of impending acute graft rejection during early post-transplantation period.

IN VITRO CULTURE OF HUMAN BLADDER SMOOTH MUSCLE CELLS

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Due to the problems encountered with the use of functionally different types of tissues for reconstructive urological surgery such as bladder, the use of regenerated autologous tissue is considering as a good alternative. Smooth muscle cells as the main contractile units of bladder wall are very important in preparation of engineered tissues for bladder replacement. The purpose of this study was isolation and propagation of smooth muscle cells from surgical specimens obtained from patients undergoing lower urinary tract open urological procedures. Surgical samples were collected with informed consent of patients undergoing open urological procedures. Samples were transported to the laboratory in transport medium. The bladder smooth muscle cells were cultured by the tissue labeling technique. Briefly the specimens were cut into small pieces. Fat and connective tissues were removed. Urothelium was detached and remaining stroma was minced into multiple small pieces. Then distributed evenly onto cell culture plates and DMEM, supplemented with 20% FBS, antibiotics and amphotericin B were added to the plates. The cultured tissues were maintained in a humidified 5% CO2 atmosphere at 37°C. The muscle cells were expanded until 70% confluence. Migration of the cells from stromal explants was apparent within one week. The cells showed spindle-shaped morphology and lack of contact inhibition at confluence. Immunoperoxidase abeling of cultured smooth muscle cells revealed α-actin expression by a group of the cells. Another type of the cells were seen which their morphology were different from spindle-shaped α-actin smooth muscle cells and seem to be smooth muscle myosin. Further investigation is needed to characterize them. Efficiency of isolation and propagation of the cells in vitro is very important in regeneration of autologous tissue for reconstructive surgery. On the other hand, shortage of donor tissue has made the investigators to harvest efficiently surgical materials as much as possible. Bladder muscle cells can be harvested from patients cultured and expanded in vitro to return into their body for reconstructive purposes. In this study we got experience to harvest urological surgical samples and propagate their smooth muscle cells. This experience together with another work on isolation and culture of human urothelial cells will help us to work more seriously on regeneration of autologous tissues for the patients.
P-112
EFFECT OF LOSARTAN ON DOPPLER SONOGRAPHY INDICES IN KIDNEY TRANSPLANTED PATIENTS: A RANDOMIZED CLINICAL TRIAL STUDY

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Color Doppler sonography indices, such as resistive index (RI) and pulsatility index (PI), can predict arteriolar sclerosis of internal renal vessels in kidney transplantation. In the other hand, the blockage of Angiotensin II receptor with angiotensin II receptor antagonists could have antiatherogenic effects. The aim of this study was determining the effect of losartan on RI of renal allograft. In a randomized, blinded, controlled trail, we compared treatment group by losartan (25 mg two times daily) with control group for changing of duplex sonographic measurements in renal allograft recipients (male = 30, female = 20) from living donor. The patients in the two groups had similar base-line characteristics. 49 patients (losartan group: 24 and control group: 25) completed twelve months follow up. After 12 months, the mean RI and of intrarenal and main artery in the losartan and control groups were (0.71 ±0.06 vs 0.69±0.07, P = 0.4) and (0.74 ±0.07 vs 0.72±0.07, P = 0.3) and for PI (1.3±0.25 vs 1.29±0.28, P = 0.8) and (1.5±0.3 vs 1.4±0.34, P = 0.3) respectively. Losartan have no effect on Doppler sonography indices. However, longer follow up is needed to confirm this issue.

P-113
SURGICAL TECHNIQUES IN TREATMENT OF UROLOGIC COMPLICATION AFTER RENAL TRANSPLANTATION

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Urologic complications are one of the most common complications after renal transplantation. Early diagnosis and suitable treatment can preserve function of transplanted kidney. In this study incidence of urologic complications, surgical techniques and results of treatment were evaluated. During 1989-2007, 1000 renal transplantation have been performed in our center. 200 of them were followed for an average of 4 years (1-13 years). Urologic complications were considered at patients with creatinine level rising without signs of renal rejection. Follow-up evaluation methods included: serum creatinine level, renovesical ultrasonography, radioisotope scanning and nephrostomogram. From 200 cases, 14 cases had complications (7%) Mean age of patients were 29 y(11-48) and complications occurred between 12th and 950th days (mean 147 days) after transplantation. Patients had received graft from: living unrelated (9 cases), living related (1 cases), and cadaver (4 cases). Ureteric stenosis (6 cases: 3%), ureteric obstruction (3 cases: 1.5%) and urinary leakage (5 cases: 2.5 %) were most common complications. In 9 cases with rise of creatinine which had ureteral obstruction or stenosis percutaneous nephrostomy were performed, and in 2 of them endourologic intervention improved stenosis. Seven of the 9 needed open surgery. Techniques of ureteral repair were: Boari’s flap (2 cases), uretero-ureterostomy or pyelo-ureterostomy to native ureter in 4 cases and ureteroneocystostomy in 1 case. In urinary leakage (5 cases), in 2 cases leakage were stopped without surgery (by nephrostomy), and in 3 cases surgical management (ureteroureterostomy or pyelo-ureterostomy to native ureter , and Boari flap and anastomosis to transplanted kidney calyces) were done . In conclusion: in this study the most diagnostic method of urologic complications was sonography and the best method to detect complication site was nephrostography. Surgical techniques were selected upon the site and severity of complications. Results of operations were successful.
**P-114**

**INSULIN RESISTANCE AND INSULIN SECRETION CHANGES IN KIDNEY TRANSPLANT RECIPIENTS IN EARLY AFTER TRANSPLANTATION**

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This study evaluated insulin resistance (IR) and insulin secretion (IS) changes and the impact of delayed graft function on them in uremic patients in early transplantation. A total of 55 kidney transplant patients; without history of diabetes mellitus, were selected. The basal values of glucose (G) and insulin (I) were used to calculate indexes of IR and beta-cell function; IS, according to the homeostasis equations, before transplantation, in 3rd day after transplantation and at the end of first, second and third week after transplantation. Insulin resistance index more than 2.24 and insulin secretion index more than 100% were considered abnormal. Before transplantation IR was present in 62.5% of patients, while only 20% had impaired IS (p-value = 0.012). At the end of third week with normalization of kidney function in all patients; IR and IS was present in only 22.2 and 11.8 percent of patients respectively (p-value = 0.358). When comparing the IR and IS prevalence before transplantation and 3 weeks after engraftment, IR was significantly reduced (p-value < 0.001), while IS prevalence reduction was not significant (p-value=0.17). Comparing the results, between normal functioning grafts and delayed functioning grafts showed a significant difference in both IR and IS in these two groups (p-value = 0.018 and 0.024 respectively for IR and IS). Using regression models, only cumulative cyclosporine dose administered and plasma creatinine changes, were significantly associated with IR (P-value = 0.04 and 0.07 respectively). In conclusion, in uremic non-diabetic hemodialyzed patients IR is significantly more prevalent than impaired IS. Successful transplantation results in significant normalization of IR with no significant effect on IS in early after transplantation. In DGF group there is a significantly more prevalent IR and IS, with resumption of normal graft function, difference between them and normal functioning graft patients disappears at the end of 3rd week after transplantation.

**P-115**

**SIROLIMUS INDUCED PULMONARY EDEMA**

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Sirolimus-induced pulmonary toxicity has only been recently recognized. It represents with dyspnea, cough and fever. Pneumonitis developed within 1–8 months after initiation and its incidence is around 10% in patients who later switched to sirolimus. Histologically it is characterized mainly by interstitial pneumonitis. Here we report two case of sirolimus induced pulmonary edema, as far as we know this is the first report of such complication among renal transplanted patients. Case 1: A 60 year old renal transplanted man developed progressive dyspnea and dry cough. He received empiric antibiotic therapy, combined with anti-cytomegalovirus (CMV) and anti-Pneumocystis, but there was not any improvement. Serologic study for CMV and PPD skin test were negative. Six weeks before his admission, because of squamous cell carcinoma of scalp his immunosuppressive regimen was changed from cyclosporine and mycophenolic acid to sirolimus 2 mg/day. Physical examination revealed bilateral basilar crackles. Chest radiograph showed a bilateral basilar infiltration and chest CT scan disclosed bilateral central haziness compatible with pulmonary edema. Sirolimus discontinued and cyclosporine resumed again. Patient’s dyspnea and cough improved over the next three weeks. Broncho-alveolar lavage was compatible with lymphocytic alveolitis. Three weeks after discontinuation of sirolimus chest radiography was quite normal. Case 2: A 48-year-old renal transplanted man was started complaining from dyspnea and cough three weeks following the replacement of Cyclosporine and Mycophenolate Mofetil by Sirolimus(2mg/day). His high grade B-cell lymphoma was recently diagnosed. Chest X-ray and chest CT scan was compatible with pulmonary edema. The bronchoalveolar lavage revealed; 9% Macrophages, 0% Neutrophils, 91% Lymphocytes, and 0% Eosinophils. Sirolimus was stopped and replaced with cyclosporine. Dyspnea and cough progressively improved and chest radiograph was cleared 19 days after discontinuation of sirolimus. Findings of these two patients were compatible with sirolimus induced non-cardiogenic pulmonary edema. Increasing application of sirolimus should be associated with awareness of this newly reported complication.
ACUTE REJECTION OF RENAL ALLOGRAFT FOLLOWING EZETIMIBE THERAPY IN A DIABETIC PATIENT

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Ezetimibe has shown efficacy in the therapy of hypercholesterolemia in renal transplant patients. Some studies have reported that Ezetimibe may increase the levels/effects of cyclosporine. Here we report a transplanted patient with acute rejection following taking Ezetimibe. A 56 year-old man receiving kidney transplantation from living unrelated donor 7 years ago. The cause of ESRD was diabetes. During 7 years after transplantation, no episode of acute rejection had happened and serum creatinine level was between 0.9 and 1.1mg/dL. During one previous year, trough level of cyclosporine was between 121 and 125 ng/ml, when the patient was taking cyclosporine 75 mg two times a day. After one month receiving ezetimibe for treatment of hyperlipidemia, serum creatinine raised to 4.4 mg/dL and trough level of cyclosporine decreased to 45 ng/ml and renal scan showed acute rejection. After receiving of four pulses of 1000 mg prednisolone and discontinuing of ezetimibe, serum creatinine decreased to 2 mg/dL. We conclude that in diabetes, Ezetimibe could decrease cyclosporine level and cause acute rejection.

IS ATORVASTATIN EFFECTIVE IN KIDNEY TRANSPLANT CANDIDATES WITH HIGH PANEL REACTIVE ANTIBODY?

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Renal transplantation compared with dialysis can improve the life of patients with end stage renal disease. One of the contraindications of kidney transplantation is development of harmful antibodies in hemodialysis patients who are a candidate for kidney transplantation. These antibodies reduce the survival of grafted kidney and increase the risk of acute rejection. Panel Reactive Antibody (PRA) test is used for detecting these antibodies. Increase in panel reactive antibody titer is related to risk of hyper acute, acute and chronic graft rejection. Among kidney transplant candidates who are in waiting list for transplantation, 14 % have PRA above 80% and 15.9% have PRA between 10 and 79%. In some of the studies, Statins have been considered as useful agents for reducing the PRA. The current study, investigates the effect of Atorvastatin on PRA. In an experimental and interventional study 13 patients with end-stage renal disease who were candidates for kidney transplantation, received atorvastatin for 6 months. PRA for each patient was checked before treatment and then every 2 months after treatment for 3 times. Cholesterol, triglyceride and liver enzymes were checked before and after treatment. Data on Weight, height, past history of transfusion and kidney transplantation, cause of kidney disease and duration of dialysis were gathered via questionnaires. Mean of PRA was 61.93 ± 17.85 before treatment with atorvastatin and 51.15 ± 18.94, 43.75 ± 14.47 and 41.53 ± 22.94 at, 2, 4, and 6 months after treatment. Mean of total cholesterol before treatment was 147.69 ± 28.49 and after treatment 126.76± 22.24. Mean of LDL cholesterol was 86.44±25.76 before treatment and 70.23 ± 14.11 after treatment. These results showed significant reduction in PRA after treatment with atorvastatin and 2 months later. (P = 0.002, P = 0.001). Mean of total cholesterol and LDL showed significant reduction after treatment. (P = 0.005, P = 0.004) In conclusion, Atorvastatin significantly reduces PRA in kidney transplantation candidates as an effective, inexpensive and well-tolerated medication.
PROTECTIVE EFFECT OF CAPTOPRIL AND ALLOPURINOL AGAINST RENAL WARM ISCHEMIA REPERFUSION INJURY IN DOGS

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Captopril and Allopurinol have protective effect against renal warm ischemia with different mechanisms. We evaluated this protective effect against 1 hour warm ischemia induced in dog’s kidneys. In this experimental study we performed an operation in 15 healthy dogs. During these procedures both kidneys was clamped for 1 hour then left kidney were removed for pathologic evaluation and right kidneys remained in situ for functional assessment. Five random dogs received 1 mg/kg/day Captopril orally before and after surgery (Captopril group) another five dogs received 10 mg/kg/day Allopurinol orally before and after surgery (Allopurinol group) and reminder five dogs received no drugs as a control group. Serum urea and creatinine were measured preoperatively and on postoperative days 1, 3, 5, 10 and 16 in all groups. Serum levels of urea and creatinine elevated in all groups but in Captopril group maximum levels of urea and creatinine were significantly lower than control (P<0.05) In Allopurinol group the maximum rise of creatinine were significantly lower in comparison to control group (P<0.05) but the maximum levels of urea in this group have no significant difference when compared with control values . (P<0.05) There was no significant difference in pathologic change in three groups. In conclusion, one hour warm ischemia result to ATN so it is not safe for dog’s kidneys. Although Captopril and Allopurinol can not prevent ATN after one hour warm ischemia but can reduce its severity and can improve renal function after warm ischemia.

GENITOURINARY TUMOR FOLLOWING KIDNEY TRANSPLANTATION: A MULTICENTER STUDY

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Renal transplantation has been advocated as the treatment of choice for end-stage renal disease. Immunosuppression increases the incidence of cancer and promotes the growth of neoplasm in solid-organ recipients. There have been few reports on the incidence of cancer from transplant registries. It is difficult to precisely ascertain the incidence of most tumors, and to compare their rates of occurrence with those in the general population, using data from small, single-center studies. Thus, we made a plan in this study to know the prevalence of genitourinary cancer development in Iranian renal transplant recipients. In the current study, we collected data from 5 kidney transplant centers in Iran between 1984 and 2008, to detect the incidence, type, and outcome of cancers after kidney transplantation. Only histologically confirmed tumors, which occurred after renal transplantation, were included in the analysis. Of the 5532 patients who underwent kidney transplantation, genitourinary tumors were detected in 18 (0.32%), 11 male and 7 female. Predominate genitourinary cancer was transitional cell carcinoma (TCC) of bladder (n=6); and followed by renal cell carcinoma (n=4), ovarian cancer (n=3), breast cancer (one male and one female), prostate cancer (n=1), seminoma (n=1) and uterine cancer (n=1). All RCC occurred in the native kidneys. Mean age of patients was 48 ± 10 (25-72) years and median time of diagnosis since transplantation was 45 (4-240) months, seven patients died during the follow up period. There was a male predominance in TCC of bladder and RCC (5:1 and 3:1, respectively). In conclusion, TCC of bladder was the most common genitourinary tumor following kidney transplantation and was predominancet in male.
IS PREOPERATIVE INTRAVESICALLY APPLIED ANTIBIOTIC SOLUTION EFFECTIVE IN THE PROPHYLAXIS OF URINARY TRACT INFECTION COMPLICATIONS OF RENAL TRANSPLANTATION?

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Urinary tract infection (UTI) is a major cause of morbidity and mortality in renal transplant recipients. The effect of intravesically applied antibiotic solution in the prevention of infectious complications of renal transplantation is still controversial. The aim of this study was to evaluate the efficacy of intravesical amikacin for the prophylaxis of the post transplant UTI within the first three months after kidney transplantation. In a prospective, randomized controlled trial, two hundred consecutive renal transplant recipients were randomly allocated to two 100 study groups. The bladder was filled preoperatively with saline solution containing amikacin (1 gr in adults or 30 mg/kg in children) in the test group, and with saline solution only in the controls. Patients were followed up for three months after the transplantation. Post operative urinary tract infection was defined based on a urine culture with a bacterial count of 100,000 CFU per mL of urine, or a positive nitrate test. Factors such as gender, age, the underlying kidney disease, receiving the first graft or subsequent retransplantation, and the source of graft (living-related, unrelated, or deceased donor) were analysed. The overall incidence of UTI was significantly lower in the test group (25% vs. 49%; p=0.0007). In addition, male patients, adults, first kidney graft recipients, patients with ESRD due to glomerulonephritis, having renal transplantation for the first time, or those patients from the test group receiving a living-related graft have significantly lower episodes of UTI than their control counterparts (p<0.05). Ecoli was the most common organism causing UTI (28.9%). In conclusion, the addition of amikacin to the bladder irrigation fluid could have significant effects on the overall incidence of UTI in the first three months after the kidney transplantation.

SUCCESSFUL TREATMENT OF POST-RENAL TRANSPLANT ORAL KAPOSI’S SARCOMA WITH CONVERSION TO RAPAMYCIN TREATMENT

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The incidence of Kaposi’s sarcoma (KS) is higher in organ transplant recipients. The lesions are mainly cutaneous and isolated mucosal involvement is rare. We herewith report a 26-years-old male patient, who underwent a living unrelated donor renal transplantation for chronic interstitial nephropathy. His immunosuppression protocol consisted of corticosteroids, cyclosporine & immuran. Twenty-five months later, presented with a purple hyperplastic lesion and mucosal nodules more than 8 mm in diameter in hard palate and gingiva of oral cavity. He reported that the lesion had been present for 1 month. Further examination confirmed that no similar lesions were present on his skin. Computed tomography of the oral cavity revealed multiple lytic bone lesions. Histological examination coupled with immunohistochemistry was suggestive of KS. The patient tested positive for anti-Herpes Human Virus antibodies. Cyclosporine & immuran were withdrawn and rapamycin was introduced. This resulted in a regression of both mucosal and bone KS in two to three month. Two-years follow up didn’t show any effect of flair up of KS. Our case suggests that rapamycin-based immunosuppression offers a promising approach to the management of post-transplant KS, particularly with mucosal involvement.
EVALUATION OF VENOUS HYPOXANTHINE AND XANTHINE DURING AND IMMEDIATELY AFTER KIDNEY TRANSPLANTATION FOR DETERMINATION OF DELAY GRAFT FUNCTION (DGF)

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End stage renal disease has many causes and the best treatment for this condition is kidney transplantation. DGF is one of the numerous complications of kidney transplantation. Many pathogenic factors have been considered and the effect of ischemia and reperfusion is one of them. In this study we assessed the ability of hypoxanthine and xanthine concentration in transplanted kidney venous blood measurement to predict DGF. From March 2004 to September 2005, we carried out renal vein blood sampling during and immediately after transplantation in 47 patients. After measurement of purine metabolites with HPLC in blood samples, the metabolite rise or not with respect to baseline level was evaluated. All patients were followed for the next 4 days. Each patient was then assigned in one of the metabolite increased or not increased group and then the relationship between purine metabolite rise with DGF and other related factors (recipient and donor age, operation time, anastomosing time, vascular reclamping) was assessed with fisher’s exact test. 30 male (% 63) and 17 female (% 37) patients with mean age 34.8 year were studied. In 17 patients the purine metabolite raised and in other 30 patients no change were noticed. These changes were significant only for hypoxanthine (Mean increase 1.28 mg/l ± 1.57 mg/l in the raised group in comparison with -0.32 mg/l ± 4 in no change group, P < 0.001). In the raised group 5 persons (% 29.4) and in not raised group 3 persons (% 10) developed DGF but in analytical assessment no relationship was found between two variable (P = 0.118). Among the other effective factors in development of DGF, only the anastomosing time had significant relationship with increase in metabolite level. (mean time 40 min ± 7.81 in reseal group in comparison with 35 min ± 7.37 in the other group (P= 0.035). In conclusion, although cold ischemia for short period during kidney transplantation can increase serum hypoxanthine level, it is not a marker of sever ischemia. In this study we could not give a precise conclusion about the significance of changes in serum xanthine level after reperfusion during ischemia of short duration because this condition was not observed in our study. It seems that for predicting DGF considering factors like reclamping of renal vessels during transplantation and urine flow after vascular anastomosis are better indicators.

THE OUTCOME OF RENAL TRANSPLANTATION IN CHILDREN WITH FSGS

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The recurrence of focal segmental glomerulosclerosis (FSGS) after renal transplantation has a potentially detrimental impact leading to the loss of renal function. Although, plasmapheresis (PF) and rituximab are commonly recommended the treatment is still a matter of debate. We report our single-center experience to assess the outcome of the renal transplantation in children with FSGS. Medical records of 10 (F/M: 4/6) renal transplanted patients with FSGS were evaluated. Among 10 grafts 7 were from living related and 3 from deceased donor. The original diagnosis of FSGS as well as recurrences was biopsy-proven in all patients. All patients treated with calcineurin-based immunosuppressive therapy. PF was done at days -3,-2,-1 and 5 consecutive days following transplantation for all living related donor transplanted patients. Patients with deceased donation had only post-transplant PF. The mean age was 12.6±4.7 years. The mean duration of follow-up was 23.1±16.2 months. Two patients with hyperacute rejection were followed-up for less than 1 month. One of them had biopsy-proven humeral hyperacute rejection while the second was implicating recurrence of FSGS. Post-transplant recurrence of FSGS was confirmed in 3 (33%) patients and all of them were treated with pre and post-transplant PF while 2 have also received rituximab. Remission was obtained in 1 of 2 patients that have received rituximab while the other had responded partially. The one who did not receive rituximab had a graft loss at the 2nd month of transplantation. Recurrence of FSGS in the transplanted kidney is a severe condition associated with graft loss. New therapeutic regimens and the efficacy of rituximab and PF should be evaluated in prospective studies with large groups.
**P-124**

**TANGERINE JUICE AND CYCLOSPORINE LEVELS IN PEDIATRIC RENAL TRANSPLANT PATIENTS**

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The aim of the present study was to investigate the effect of tangerine juice on the pharmacokinetics of cyclosporine A (CsA), in children who received renal transplantation. This placebo-controlled study was done on 10 kidney transplant recipients with stable cyclosporine trough levels received either tangerine (Unshio Satsuma) juice or water. Patients were given their morning dose of CsA, and then 250 ml water or the juice and 12 hr, PK investigations were performed. The main outcome measures were peak concentration and time to peak and area under the concentration-time curve. Administration of CsA with tangerine juice compared with water didn’t increase significantly in the area under the whole blood concentration versus time curve from 0-12 hrs (AUC 0-12) of CsA, (tangerine juice: 2797 ± 1361 [P=0.5], water: 3053 ± 1532). Co administration of tangerine juice with CsA compared with water had no significant effects on the AUC 0-12, Cmax and tmax of the CsA in pediatric renal transplantation.

**P-125**

**OUTCOME OF LIVING DONOR RENAL ALLOGRAFT SURVIVAL IN CHILDREN WITH FSGS**

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FSGS is the most frequent GN that may recur in a renal allograft. Compared with adults, the impact of FSGS on graft survival appears to be more significant in children. Thus we decided to assess graft survival and complications after renal transplantation in children with FSGS. Outcome of renal transplantation in 25 children with FSGS who received a renal transplant at Labafi Nejad Hospital was studied and compared with 75 patients as a control group. The mean follow-up duration was 68.16 (s.d. = 41.93) months. Other than demographics, variables such as DGF, acute rejection, number of acute rejection episodes, and graft failure in both groups were evaluated. Acute rejection was seen in 22/25 (88%) of FSGS group, compared to 40/75 (53.3%) in the control group. This difference was statistically significant (p = 0.001). DGF was seen in 4/25 (16%) and 13/75 (17.3%) in the FSGS and control groups, respectively (p = N.S.). The mean graft survival time was 115.61 (s.e.m. = 12.56) and 155.56 (s.e.m. = 7.16) month in FSGS and control group, respectively (p = N.S.). We demonstrated that graft function and survival were not significantly different in the FSGS and control patients. However, acute rejection episodes were more common in FSGS patients but without a significant impact on graft survival.
Kidney transplantation (KT) is the preferred modality of treatment in children with end stage kidney disease. A functioning allograft leads to correction of most of the endocrine and metabolic derangements associated with chronic renal failure. Anemia which is very common in pre-transplanted children improves soon after kidney transplantation. In this cross-sectional study anemia is evaluated in kidney transplanted children. The latest hematologic data including hemoglobin (Hb), mean corpuscular volume (MCV) and mean corpuscular hemoglobin (MCH) of all children with KT who were under follow-up of pediatric nephrologists in Shiraz for 6 months to 15 years (mean=59.2±39 months) was gathered during their last visit. SPSS15.1 software was used for Statistical analysis. Of two hundred and sixteen children ≤19 years at the time of transplantation, 138 patients were followed by pediatric nephrologists in Shiraz and included in this study. One hundred and thirteen (81.8%) had functioning grafts and serum creatinine was ≤1.5mg/dl in 88 patients (63.7%). The mean age at transplantation time was 13.6 ± 3.5 years with age range of 3 to 19 years. The male to female ratio was 1.33. Their Primary renal diseases were reflux-obstruction dysplasia (42%), hereditary-metabolic diseases (34%), glomerular diseases (19%), stone (1.5%) and unknown (3.5%). The kidney donors were deceased (47.8%), related (36.9%) with 80.3% parents, and unrelated (15.2%). Mean Hb level of recipients was 11.7 ± 2.5gm/dl (range 7-18.6gm/dl). In those with serum creatinine ≤1.5 mg/dl mean Hb level was 12.6 ± 1.97gm/dl, while 15 patients (17%) including 11 boys and 4 girls had Hb <11gm/dl (range 7-10.9gm/dl), two of them were known cases of thalassemia minor. MCV ranged from 61 to 108 with mean of 84 (SD±8.5). MCV was less than 80 in 22 patients (16 had also Hb levels less than 11). Mean MCH was 27.6 ± 6.4 (range 19-35). In conclusion, after successful kidney transplantation, Hb level rose dramatically in the majority of the patients, however, some were found to have unexplained anemia.
**P-128**  
**INFECTIVE ENDOCARDITIS AFTER KIDNEY TRANSPLANTATION**

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Infective endocarditis (IE) is a rare but life-threatening infection after renal transplantation. Therefore, the current study was initiated to determine the outcome of kidney transplant patients hospitalized for bacterial endocarditis. In a retrospectively studied, we analyzed the medical records of 3700 kidney transplant recipients at two major transplant centers in Iran, between January 2000 and June 2008 for infective endocarditis. During the study, 15 patients with IE hospitalized in our centers, were included if they met the modified Duke’s criteria for definite IE. Data were gathered for patient age and sex, the source of the donated kidneys (deceased versus living donor), immunosuppressive regimen, clinical presentation of infective endocarditis, time presentation since transplantation, comorbid conditions, treatment modalities, the patient’s response to treatment, and the effect of IE on graft and patient survival In-hospital and 6-month mortality rate were 33.3% (n = 5). Patient survival rate in all recipients was 66% at 6 months. The spectrum of organisms causing infective endocarditis was obviously different in transplant recipients than in the general population; the most common causes of IE (60% of the infections) were due to group D streptococci and enterococci. The majority of our recipients had mitral (n = 9) and aortic valve (n = 8) endocarditis, and twenty percent (n = 3) of IE episodes presented with two infected valvular sites. Rapid diagnosis, effective treatment, and prompt recognition of complications in kidney transplant recipients are essential to good patient outcome. The mortality rate in the current study was lower than the previous reports.

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**P-129**  
**HAND-ASSISTED LAPAROSCOPIC NEPHRECTOMY IN A SUPER OBESE DONOR**

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Shortages of cadaveric donors combined with high incidence of obesity in Saudi Arabia have forced the re-examination of living donor selection to include obese donors who are otherwise healthy. Open nephrectomy in obese donors carries higher risk of surgical complications in the peri-operative period. Even in the era of laparoscopic surgery, obesity is still a challenge due to intraoperative technical difficulties. We present a case of a super obese donor who underwent hand assisted laparoscopic left donor nephrectomy (HADN). The patient is a 33-year-old male with a body mass index (BMI) of 55 kg/m², who was interested in donating a kidney to his cousin. He was the only member of the recipient family that was willing to donate a kidney. His history and physical examination were completely normal except for the obesity. The risks of the procedure, risk of peri-operative morbidity/mortality associated with surgery on obese patients, and the risk of possible future kidney disease were explained to the patient on several clinic visits. The laboratory investigations included normal glucose tolerance test, lipid profile, creatinine clearance, and absence of proteinuria. Flow-cytometry crossmatch was negative. CT angiogram revealed the presence of double renal arteries bilaterally, and stress echocardiogram was normal. Due to the patient’s body habitus, we modified our surgical port sites (Figure). Our usual midline incision was shifted to the patient’s left lower quadrant to be able to reach the left kidney. Muscle splitting technique was performed. An additional 5 millimeters trocar (total 3) was inserted during the surgery to assist with bowel retraction. His surgery took a longer period of time (205 minutes, average being 143 minutes) with higher than our average blood loss (250 milliliters, compared to 119 milliliters), due to the presence of aberrant retroperitoneal blood vessels. We encountered these aberrant blood vessels mainly posterior to the kidney, and despite using the Harmonic scalpel (Ethicon Endo-Surgery, Inc.) one artery bled that required clipping. The presence of the hand helped in the immediate control of the arterial bleeder, and also in the dissection of the difficult retroperitoneal due to the presence of excessive amounts of adipose tissue. The warm ischemia time was 180 seconds and the cold ischemia time was 45 minutes. Both arteries were implanted separately in the recipient external iliac artery with excellent perfusion and immediate diuresis. Postoperatively, deep vein thrombosis prophylaxis and aggressive pulmonary toilet were implemented, and his course was uneventful. He was discharged home on postoperative day 4. Patient wounds healed without any complication. Eighteen-month follow-up revealed normal blood pressure and creatinine levels, and absence of proteinuria. The recipient renal function remained within normal values. Accepting healthy otherwise obese donors can increase the pool of living donation. HADN is feasible in super obese donors with modification of surgical port sites, and we believe is superior to open nephrectomy in regards to wound and post-operative complications. We also believe that it is superior to pure laparoscopic nephrectomy in dissection and control of bleeding as obese donors have more retroperitoneal fat and aberrant blood vessels.
P-130
IRANIAN LIVING UNRELATED KIDNEY DONORS,
DESIGNATION OF LONG TERM OUTCOME PROGRAM:
A PRELIMINARY REPORT OF 1 YEAR FOLLOW UP
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Establishment of compensated and regulated living unrelated renal transplantation in Iran in 1988 resulted in decreasing number of patients in the waiting list. A cohort study for evaluation of long term medical complications of donors has been designed by Academy of Medical Sciences of IRAN in June 2006. This is a preliminary report of donors follow up (F/U) program. Living unrelated kidney donors who had donated their kidneys since June 2006 were asked to participate in a 10 years cohort study. Demographic characteristics (age at time of nephrectomy, gender), BMI, systolic and diastolic blood pressure and laboratory findings including fasting plasma glucose (FPG), hemoglobin (HGB), BUN, serum creatinine (Cr), uric acid, lipid profile and urinalysis are recorded in every visit. Urine protein to urine creatinine ratio will be reported in patients after 1 year F/U. GFR is estimated by Cockroft-Gault formula. Control healthy subjects of the same age will be followed up in parallel with donors. A total of 408 donors were registered (79.7% male and mean age 28.7 ± 5 years) that 3.7 ± 3 months had passed since their nephrectomy. Ninety donors completed 12 months follow-up until now. Among these patients, HGB (13.7 ± 1.4 mg/dl vs. 14.6 ± 1.3 mg/dl), hematocrite (41% ± 4.1% vs. 43.9% ± 5.1%) and GFR (83.9 ± 15.7 cc/min vs. 117 ± 29.1 cc/min) increased significantly after F/U. There were no statistically significant differences regarding other clinical and laboratory findings before and after follow up. This preliminary report of 1 year F/U of LURDs revealed early drop in GFR was compensated by increased GFR at 1 year. These donors will be followed up annually until 10 years and in the future long term outcome of LURDs in Iran will be reported.

P-131
OUTCOME OF KIDNEY TRANSPLANT IN DONORS AND RECIPIENTS WITH HTLV1
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HTLV-I is an endemic disease in Khorasan. Considering the two specific kidney transplantation centers in Mashhad, we don’t know yet that the patient with chronic positive HTLV-I should be transplanted or not, and whether the disease will transmit to the receiving person, whether the receiving person is affected by HTLV-I, will get worse by taking immunosuppressive drugs or not? And etc. So we conducted this study to answer the above questions. We studied 13 patients (mean age 43.61 years), transplanted with positive HTLV-I and compared them with a control group who were HTLV-I negative (mean age 42 years). Age, genders, kidney disease, time of dialysis between the two groups were similar. We investigated the probability of virus transmission through kidney transplantation and the probable complications. Immediate diuresis was the same between sero positive & sero negative HTLV-I patients. One week after surgery, creatinine decreased and it was same between two groups (control: 1.58 ± 0.8; HTLV-I + =1.65 ± 0.9 mg%; P=0.6). Chronic rejections between two groups were similar (2 cases). There was neither acute nor hyperactive rejection between two groups. Surgical complication occurred in 3 HTLV-I positive recipients (bleeding, infection, D.M., Tuberculosis) and 2 HTLV-I negative (fever of unknown origin and bleeding from surgery site). Complication of HTLV-I like myelopathy and T cell lymphoma did not occurred after 1-5 years follow up. According to our data when the demand of kidney is high, we can use kidney from HTLV-I positive donor as a marginal donors.
P-132
HIGH PREVALENCE OF CLINICALLY SIGNIFICANT INFECTIONS AND CYTOMEGALOVIRUS DISEASE IN RENAL TRANSPLANT RECIPIENTS WITH SERUM MANNOSE-BINDING LECTIN DEFICIENCY

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The key components of innate immune system such as serum Mannose-Binding Lectin (MBL) levels constitutes principle defense against infections when adaptive immune response is compromised by immunosuppressive drugs. Some studies have shown significant elevation in serum MBL levels in patients with advanced renal failure. The purpose of this study was to see whether elevated MBL levels will decrease after renal transplant (Rtx) and whether MBL deficiency in Rtx recipients increases infectious complications. This study was performed in 71 Rtx recipients and 48 healthy controls. Group (I) were 36 consecutive Rtx recipients whose blood samples were collected for serum MBL levels on a day before Rtx and on days 7 and 14 after Rtx. Patients were followed for 6 months for development of clinically significant infections .Group (II) were 35 stable Rtx recipients from Rtx Clinic who gave consent for this study. Serum MBL concentrations were measured by MBL Oligomer Elisa Kit (www.antibodyshop.com). MBL < 500 ng/ml were classified as low and MBL> 500 ng/ml normal/high. Variables among low and high MBL cases in both groups were compared Results of study in group (I), showed that serum MBL levels is not elevated in advanced renal failure. MBL levels decreased from 1020 in 1 and 2 weeks post Rtx respectively. 1030 and 1562 905 to 16991744 Five of 36 patients who had low serum MBL developed more clinically significant infections (P= 0.008) and more CMV disease (P< 0.0001). In group (II), 10 of 35 patients had low serum MBL levels who had developed more CMV disease since date of Rtx. (P= 0.01). These findings show an important role for serum MBL levels in defense against developing CMV disease after Rtx. It is suggested that low serum MBL levels to be considered a risk factor for CMV disease needing CMV prophylaxis.

P-133
THE IMPACT OF ANXIETY AND DEPRESSION ON THE ENGAGEMENT IN SEXUAL INTERCOURSE; DOES RENAL TRANSPLANTATION DIFFER FROM OTHER CHRONIC CONDITIONS?

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Sexual functioning is often altered by chronic disease and anxiety and depression. The present study evaluated sexual intercourse and its correlation with anxiety and depression in patients with different chronic conditions. Material and methods: In this cross-sectional study, 1150 consecutive adult married patients with various medical conditions including renal transplantation (n=230), coronary artery disease (n=450), chronic hemodialysis (n=50), osteoarthritis (n=120), rheumatoid arthritis (n=200), and chronic viral hepatitis (n=100) were recruited from the outpatient clinics of Baqiyatallah Hospital, Tehran, Iran. The patients’ age, gender, and history of engagement in sexual intercourse in the two-week period prior to the commencement of the study were registered. The participants were also asked to complete a Hospital Anxiety and Depression Scale (HADS) questionnaire. In renal transplantation (B=1.1, P=0.001, CI=1.7 to 5.9), similar to rheumatoid arthritis (B=0.8, P=0.017, CI=1.1 to 5.0) and chronic hemodialysis (B=3.4, P=0.013, CI=2.0 to 48.5), depression but not anxiety, was the predictor of having sexual intercourse. This condition was different to coronary artery disease patients in which anxiety (B=0.63, P=0.023, CI=1.0 to 3.2) and depression (B=0.9, P=0.020, CI=1.1 to 5.6) were both the predictors of engagement in sexual intercourse. It was not also different with osteoarthritis and chronic viral hepatitis patients in which neither anxiety nor depression was a predictor of engagement in sexual intercourse. In conclusion, In renal transplant subjects, depression but not anxiety, is a predictor of engagement in sexual intercourse.
P-134
ADVERSE EFFECTS OF SIROLIMUS IN RENAL TRANSPLANT PATIENTS

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Chronic allograft nephropathy and calcineurin inhibitor toxicity may cause graft loss. Sirolimus may be considered for use in these situations. About 30% to 50% of patients on sirolimus therapy have mild or severe adverse effects. We aimed to evaluate the mild and severe adverse effects of sirolimus that limit its use. Since 1985, 1385 renal transplantation were performed at our center. Eighty-eight of these renal transplant recipients (64 male, 24 female; mean age, 35.9 ± 9.9 years (range, 21-59 years) received sirolimus for various reasons, which were included in this study. Possible adverse effects of sirolimus were evaluated during the follow-up. Each patient had a physical examination, and serum lipid levels, hemoglobin concentration, serum electrolyte levels were assessed. Five of the 88 patients showed no increase in proteinuria (5.6%), 83 patients had an increase in proteinuria. Proteinuria increased from a mean of 192 ± 316 mg/day to 449 ± 422 mg/day. Only 3 patients had heavy proteinuria (>3 g/day), and sirolimus was discontinued because of the proteinuria. Proteinuria in the other patients was well controlled with angiotensin-converting enzyme and/or angiotensin II receptor inhibitors. After sirolimus conversion, serum cholesterol levels increased from 187 ± 42 mg/dL to 214 ± 52 mg/dL, and serum triglyceride level increased from 161 ± 61 mg/dL to 194 ± 102 mg/dL. All patients except 4 who received hypolipidemic agents responded, and serum lipid levels fell to an acceptable level. Four patients did not respond to the hypolipidemic therapy. Another 4 patients developed unilateral lower extremity edema and sirolimus was stopped. One patient had generalized arthralgia. In conclusion; sirolimus appears to have limited serious adverse effects and mild or moderate adverse effects such as hyperlipidemia and proteinuria that can be easily controlled. Because we avoid calcineurin inhibitors, it is worthwhile to convert to sirolimus in selected patients in whom calcineurin inhibitor adverse effects and toxicity are seen.

P-135
THE INFLUENCE OF HEPATIC STELLATE CELLS IN PATIENTS WITH HCV INFECTION ON THE DEVELOPMENT OF INTERSTITIAL FIBROSIS IN RENAL ALLOGRAFTS

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The aim of this study was two fold; firstly we evaluate the influence of Hepatitis C virus (HCV) and iron deposition on hepatic stellate cells (HSC) and secondly we determine the influence of HSC’s on the development of interstitial fibrosis (IF) in renal allografts. Thirty chronic HCV patients with renal allografts were studied. Liver biopsies were scored for iron deposition and the number of HSC’s in the liver was evaluated by smooth muscle alpha-actin (α-SMA) immunostaining. Also the distribution and the density of TNF-α in liver biopsies and the distribution of TGF-β on tubules in renal allografts of same patients were evaluated immunohistochemically. The influence of HSC’s on the development of IF during 12, 24 and 36 months after transplantation in renal allografts were evaluated. The HSC’s was significantly higher in HCV patients than in normal controls and the density of HSC’s were significantly higher in patients with iron deposits compared with those without iron deposits p<0.01). TNF-α expression was localized mainly in liver sinusoidal cells and in some cases it was also expressed in hepatocytes. Patients with higher grade TNF-α expression in liver showed higher grade of α-SMA positive HSC’s (p<0.001). In parallel to these, with increasing amount of HSC’s in the liver, the incidence of the development of IF in renal allografts during 12 (p<0.01), 24 (p<0.01) and 36 (p<0.05) months after transplantation was found increased. In addition the expression of TGF-β on tubules in renal allografts were found increasing grade of α-SMA positive HSC’s in liver (p<0.01). HCV infection and iron deposits in liver induce TNF-α expression and in turn activated HSC’s. Activated HSC’s had positive correlation with tubular TGF-β expression. In conclusion HCV infection has a triggering effect on development of IF in renal allografts by augmenting secretion of TGF-β through activating HSC’s.
**P-136**

**DIABETES AND RENAL TRANSPLANTATION**

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The aim of this study is to compare one year’s outcome of diabetics subjected to renal transplantation (RTx) with matched non-diabetics as controls. All diabetics, with a first live related RTx from October 1994 to September 2007 were included. A control group comprised of non-diabetics, matching with respect to time of transplant, sex, age, pre Tx dialysis period and post Tx immunosuppressive regime. The variables studied were one-year patient and graft survival, acute and chronic rejection episodes, systemic infections and wound status. The study included 60 diabetics (Group 1) and 60 non-diabetics (Group 2), having undergone Tx surgery within a span of 3 months of each other. There were 51 males and 9 females in each group, with a mean age of 40.9 ± 7.5 and 39.7 ± 6.7 years respectively. In Group 2 Hypertension was the cause of renal failure in 25 cases, stone disease in 8, Glomerulonephritis in 3 and 24 with unknown etiology. The pre-Tx dialysis period was 14.5 ± 10.5 and 10.7 ± 4.6 months, in-group 1 and 2 respectively. Hypertension was present in 54 diabetics and 49 non-diabetics. The acute and chronic rejection episodes of the two groups had no significant difference. Post Tx infections were similar in the two groups with urinary tract infections having the highest frequency (25 in Group-1 and 22 in Group-2). Wound infection and dehiscence was significant in the diabetic patients (18 and 4 respectively) with 6 wound infections in Group 2. Three patients from Group 1 suffered an acute myocardial infarction. There was no cardiovascular morbidity in Group 2. One-year graft survival was 84% and 94% in Group 1 and 2 respectively. One-year patient survival was 89.6% and 94% in the two groups respectively. In conclusion, one-year graft and patient survival was similar in the diabetic and non-diabetic control subjects. Wound infection and dehiscence were more in diabetic subjects.

**P-137**

**THE EFFECT OF ANGIOTENSIN II TYPE I RECEPTORS BLOCKERS ON ALLOGRAFT KIDNEY: A PROSPECTIVE RANDOMIZED STUDY**

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The aim of this study was to evaluate the effect of administration of angiotensin II type I receptors blockers on patients’ variables in renal transplantation. Fifty transplant patients were randomized into two groups: treated with losartan (group A: n=25) and without (group B: n=25). Group A received losartan for one year. Blood pressure, serum creatinine, potassium, haemoglobin, low density lipoprotein- cholesterol (LDL-C), high density lipoprotein-cholesterol (HDL-C), triglyceride (TG), uric acid, and creatinine clearance and serum cyclosporine level were measured at baseline and after one year follow up. The patients consisted of 30 males and 20 females with a mean age of 40±13 years. Between the groups, there were no differences in baseline variables such as blood pressure, serum creatinine, potassium, haemoglobin, uric acid, cyclosporine level, lipid profile, creatinine clearance and dosing of cellcept, ferrous sulfate, folic acid and statins and other antihypertensive drugs. After one year follow up, losartan group had lower systolic blood pressure compared with control (113 ± 22 vs 126 ± 18 mmHg, p=0.036). Serum HDL-C was higher in losartan group than control (58 ± 22 vs 47 ± 10 mg/dL, p=0.03). Losartan group had lower haemoglobin compared with control (12.8 ± 1.9 vs 14.5 ± 2.1 g/dL, p= 0.006). 25% patients in losartan group had haemoglobin lower than 12 g/dL compared with 4% in control group (p= 0.097). After one year, there were no significant differences in serum creatinine, creatinine clearance, serum potassium, LDL-C, TG, and uric acid. This study suggests that losartan has effects on increasing serum HDL, lowering haemoglobin and systolic hypertension, but no effect on uric acid and renal function in kidney transplant patients.
P-138
EVALUATION OF PRE TRANSPLANT T-CELL ACTIVATION STATUS BY SOLUBLE CD30 DETERMINATION
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We evaluated the utility of serum CD30 (sCD30) levels as predictor of early acute graft rejection in live related renal transplant program. This prospective study included 50 consecutive renal transplant recipients who received their first live related renal allograft at the Sindh Institute of Urology and Transplantation (SIUT) between October 2006 and March 2007. Blood samples were obtained one day before transplantation and on the third and fourteen post-transplant days. Blood samples were also obtained from 50, age and sex matched healthy control individuals. Levels of serum sCD30 were measured by Enzyme Linked Immunosorbent Assay (ELISA). Donor-recipient blood group matching was identical in all patients. Pre-transplant lymphocyte crossmatch for T and B cells was negative, and panel reactive antibodies (PRA) were 0% for all recipients. The mean age of recipients was 31.6 ± 10.23 years (range 5 to 55 years), while mean donor age was 32.74 ± 8.48 years (range 21-50 years). Eleven (22%) recipients and donors were HLA identical while remaining (78%) were one haplotype match. Average serum sCD30 pre-transplant levels (37.8 ± 4.97U/ml) were significantly higher than those of healthy individual’s mean value of 8.48 ± 4.97 U/ml, (P value= 0.001). Eight (16%) patients developed acute rejection episode during this follow up period. Rejections were described and classified according to BANFF 97 classification. In conclusion, in this small single center study the serum levels of sCD30 did not show any significant difference between rejection and non rejection group in our transplant population.

P-139
ASSOCIATION BETWEEN CORONARY ARTERY CALCIFICATION AND BONE DENSITY IN RENAL TRANSPLANT RECIPIENTS
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Both atherosclerosis and osteoporosis are responsible for significant morbidity and mortality, are independent predictors of cardiovascular disease in renal transplant recipients (RTRs). There is an inverse relationship between bone mineral density (BMD) and calcified coronary atherosclerosis. The aim of this study was the evaluation is BMD significantly associated with the presence of calcification in the carotid and coronary arteries in RTRs. We prospectively studied 25 (M=13,F=12) successfully RTRs with mean age of 38/05 ± 13.93& mean BMI: 24.1 ± 4.73& mean dialysis duration of 24.98 ± 17.67 and measured serum calcium, phosphate, alkaline phosphatase, blood urea & creatinine at baseline & monthly and iPTH & BMD & intimal medial thickening (IMT) of the common carotid artery & MDCT coronary CT for calcium scoring (cs) at baseline & 6 months after RTX. Lumbar BMD decreased from 0.900±0.16 to 0.812±0.11, (p<0.001) 6 month after RTX. There was also significant decrease of BMD of Femor & Radius (p<0.001) also T & Z score of Spine & Femor(p<0.002) 6 month after RTX. Mean total ca scoring was decreased significantly from pre RTX (41.64+/−58.05) to (26.14+/−37.36) post RTX p<0.001. There was linear & meaningful correlation between CS and iPTH & ca- p product reduction after RTX. There was no any linear regression between Cs and BMD changes of Femor & Spine & Radius at month 6 after RTX. In conclusion, in early period after RTX significant improvement occurs in ca-p product & iPTH level & coronary calcification, but bone mass reduction is continued may be because of effect of immune suppressive drugs. We didn’t find any inverse relationship between BMD & calcification of coronary arteries in RTRs.
P-140
INFECTIONS AFTER HEART TRANSPLANT; INITIAL EXPERIENCE OF A SINGLE CENTER
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Infectious disease in transplant patients who are receiving immunosuppressive drugs is an important and potentially fatal problem. Early diagnosis and management is the key of success. Since 2006, 15 heart transplants are performed in our center. We reviewed infectious problems which occurred in three patients in early post op course and a late problem in another patient. One: 14 days after heart transplant the patient was ready for discharge. He had no problems, in the final CXR some small nodules was found. For better evaluation CT scan and then needle biopsy was done. It was found the patient had developed aspergillosis, which was managed and discharged after 10 days. This patient developed edema of scrotum 3 months after transplant, which after examination it was found to have a serious cellulitis, there was no need for surgical drainage, antibiotic therapy was done for 14 days and became better. The cause of cellulitis was a small nodule in the scrotum which was damaged by manipulation. Two: in the 4th post op. day of a heart transplant patient routine CXR showed some nodules in the CXR. Immediately CT scan and then fiber optic bronchoscopy was done with copious amount of secretions. Empirc antifungal and more potent antibiotic therapy started, the infiltrations were disappeared and the patient was discharged. Three: 1.5 years after heart transplant of a young lady, she suddenly developed severe abdominal pain and jaundice, many workups were done which was indicative of pancreatitis, but the Ig M of CMV titer was also increased. Treatment for management of CMV started, and the pancreatitis also resolved. In conclusion, in transplant patient like all immunosuppressed patients the paraclinical lad data such as CXR is more important than general condition of the patient and any small changes should be managed seriously. These patients are highly susceptible to viral, fungal and bacterial infections.

P-141
THE EFFECT OF LOW DOSE INTRAVENOUS PAMIDRONATE ON LATE BONE LOSS OF RENAL TRANSPLANT RECIPIENTS
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Renal Transplant Recipients (RTRs) are at risk of developing osteoporosis and osteopenia due to underlying renal osteodystrophy, hypophosphatemia, and immunosupression. It is more frequent in the first year after renal transplantation but can be continued by the time after transplantation (RTX) that result in bone loss and fractures. The purpose of this study was to evaluate the effect of low dose intravenous pamidronate in prevention of late bone loss after RTX. We prospectively studied 40 RTRs (M=20, F=20) with mean age of 38/05± 13.93, mean BMI: 24.1 ± 4.73, mean dialysis duration of 24.98 ± 17.67 and assigned them in two age & sex match groups: Pamidronate treated (Pam) group received Vit D during the study and 0.5 mg/kg intravenous pamidronate at the time and one month after RTX, and control group received only Vit D. We measured serum calcium, phosphate, Alkaline phosphatase, blood urea & creatinine at baseline & monthly and iPTH & BMD at baseline and 3 & 6 months after RTX and every 6 month to 2 years. Lumbar BMD in Pam group increased significantly from 0.827 ± 0.11 to 0.857 ± 0.12, (p<0.01) & decreased in control group from 0.900 ± 0.16 to 0.812 ± 0.11, (p<0.001) 6 month after RTX. There was also significant increase of radius BMD (p<0.001) & nonsignificant increase of femur BMD in Pam & and significant decrease of BMD of femur & radius (p<0.001) in control group 6 month after RTX. After 2 years there was significant reduction in BMD of spine control group comparing pam group (p<0.01). T & Z score of spine & femur significantly decreased (p<0.001) in control group comparing Pam group (p<0.001) 2 years after RTX. After multivariate analysis there was significant correlation between pamidronate & BMD of spine, (r=0.41, p<0.001) but there was not any linear regression between age, sex, BMI, duration of dialysis & iPTH with BMD changes of femur & spine & radius after 2 years in each groups. In conclusion,. low dose pamidronate is significantly useful in prevention of long term bone loss and can increase the BMD even late period after RTX.
Renal transplantation is considered the optimal form of renal replacement therapy for patients with end-stage renal disease. Kidney transplantation was started in Bahrain in 1995 at our unit. Between June 1995 and June 2008, 90 renal transplants in 89 patients were performed at our unit. There were 72 living related donor and 18 deceased donor transplants (DD), including 61 male and 28 female patients. Most of the recipients were Bahraini (87.5%) and 86 (95.6%) of them received their first graft. Their age ranged from 3 to 66 years and the follow up period was 1 to 156 months postoperatively. The average duration of dialysis before transplantation was 4 to 5 months. All patients received triple drug immunosuppression and induction therapy with Basiliximab. There were a total of 22 (24.4%) episodes of acute rejection diagnosed clinically and/or by-graft biopsy. Most of the rejection episodes occurred within the first month of transplantation and almost all of them within the first year of transplantation and all episodes of rejection were treated with pulse methylprednisolone. Six (6.7%) grafts had primary non-function due to acute tubular necrosis (ATN), and all of them were from DD. There were 15 episodes of severe infection. Seven patients died from their infection including three due to severe respiratory tract infection. Three patients developed CMV infection which was diagnosed on clinical and serological grounds. One patient had malignancy which was treated successfully. There were 3 surgical and urological complications encountered in our patients. At the last follow-up visit, there are 52 patients have good graft function. Twenty-two patients lost their graft, 16 of them due to death with functioning grafts. The commonest cause of graft loss was chronic rejection. In conclusions, the overall results in our center are comparable to those published from other centers in the Arab World.

We compared the sleep quality between renal recipients and patients with other chronic conditions and healthy subjects. In this cross-sectional study, 2344 participants were assessed for sleep quality using PSQI questionnaire (higher score means poorer sleep quality). Participants included kidney transplantation recipients, patients with other chronic conditions including coronary artery disease (CAD), chronic hemodialysis, ankylosing spondylitis (AS), rheumatoid arthritis (RA), osteoarthritis (OA), systemic lupus erythematosus (SLE) and healthy participants. The mean ±SD PSQI score was 6.9 ± 3.0 in kidney transplant, in comparison to 6.1 ± 2.8 for healthy controls, 7.6 ± 3.4 for CAD, 8.8 ± 3.4 for OA, 8.0 ± 4.2 for AS, 8.8 ± 3.6 for RA, 7.1 ± 3.1 for SLE, and 8.2 ± 3.6 in hemodialysis patients. The PSQI score significantly differed between these groups (p value=0.00) even after stratifying for age and sex (p value=0.00). In conclusion, in comparison to other chronic conditions, renal transplant recipients have a better sleep quality, close to the healthy population.
**P-144**

**DIFFUSE ALVEOLAR HEMORRHAGE AS A SERIOUS SIDE EFFECT OF ANTILYMPHOCYTE GLOBULIN FOLLOWING KIDNEY TRANSPLANTATION**

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Antilymphocyte globulin (ALG), a polyclonal anti-human antibody directly against a number of T-cell antigens, using as an induction therapy in sensitized patients or as a second-line treatment of acute rejection in renal allograft recipients has side effects that can range from mild to life threatening. Although, adverse reactions to ALG may include fever, chills, dyspnea, tachycardia, malaise, thrombocytopenia, and leukopenia, but delayed onset of diffuse alveolar hemorrhage (DAH) should be considered as a rare and serious adverse event of ALG. At our institution, at least four patients have developed DAH with intravenous administration of ALG after kidney transplants. All cases except one cured by discontinuation of drug as well as respiratory supportive care. The delayed onset of respiratory complication also makes these rare cases intriguing. Even though all standard precautions for infusion of ALG were implemented, a presumably delayed life-threatening adverse reaction occurred. Premonitory subtle signs such as tachypnea, along with a high index of suspicion, may allow practitioners to predict those patients who may progress to serious cardiopulmonary compromise.

**P-145**

**NON-SURGICAL COMPLICATIONS FOLLOWING HEART TRANSPLANTATION; A SINGLE CENTER EXPERIENCE**

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During the past decade, improvements in surgical techniques, anesthetic and peri-operative management and more intense antibiotic, antifungal and antiviral prophylaxis have led to more promising outcomes following cardiac transplantation. Objective of this study is to report the incidence of non-surgical complications in patients who received a heart transplant in our center. Clinical data on 11 patients (9 male, mean age 35 ± 9.6, range 24-54), who underwent cardiac transplantation between May 2006 and August 2008 at Masih Daneshvari Hospital were retrospectively reviewed. During the study period, one patient developed aspergillus pneumonia (presenting with pulmonary nodules), pneumonia of unknown origin (also presenting with pulmonary nodules) and cytomegalovirus viremia (presenting with abdominal pain and nausea) at 14 days, 4 days and 1.5 years after transplant surgery, respectively. Furthermore, massive pericardial effusion was detected in two patients that resulted in surgical intervention in one of them. Endomyocardial biopsy in other two patients showed evidence of rejection which was managed successfully with high dose methylprednisolone pulse therapy. No patient died due to non-surgical complications following cardiac transplantation. The results of this small study are comparable with the findings of previous larger investigations which have shown low but real rates of non surgical complications in heart transplanted patients owing to the improvements in surgical techniques and immunosuppressive therapy.
MENTAL HEALTH STATUS AND ITS EFFECT ON LIVER TRANSPLANT OUTCOME

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Liver transplantation is an accepted, life saving operation applied for end-stage liver-failure patients. Poor psychological status & poor adherence is recognized as a major contribution of morbidity, mortality, decreased quality of life, higher medical cost & over utilization of health care services among transplant recipients. During 1378 to 1386, 170 recipients of liver transplant in Shiraz were chosen. Psychological evaluations were done for detecting any significant psychiatric disorders by a psychiatrist before operation. Pre op diagnosis, sex, age and marital status of recipients before operation and duration of hospitalization, rate of post op infections and total morbidity and mortality after operation were collected by researchers in a questioner. The data was evaluated with SPSS 15 by a statistician. From 170 patients 41.6% were females; the mean age was 32.8 years old and 58.2 were married. In psychological evaluations 26.5% of the patients were depressed, 0.7% had insomnia & restlessness, and cognitive disorders were detected in 1.4% of patients. The greatest rate of depression was detected in patients with autoimmune hepatitis (16.1%) (In aspect of diagnosis), females (1.5 times more than males) in aspect of sex & married patients. Post op hospitalization course was longer in the patients with depression (15 days vs. 28 days P value < 0.005). As whole Post op infections were developed in 8 % of the patents, which was twice more in the patients with pre op depression. There was no significant relation between depression and the rate of mortality. Psychological supports before & after liver transplantation can improve outcome of recipients, decreased the course of hospitalization which may decrease post op infections. So psychological interventions must design to improve mental status of the recipients which may improve the successfulness of these important & life saving operation.

MALARIA INFECTION TRANSMITTED BY LIVING KIDNEY DONATION: A CASE REPORT FROM IRAN

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Malaria transmission from donor has been reported as a rare life-threatening complication of kidney transplantation. We describe a case of malaria infection developed in a renal transplant recipient as early as 10 days after transplantation. The patient was 28-year-old man undergone living unrelated kidney transplantation. He came from "Shahreza", a city of Iran where malaria is not endemic. His donor was a 38-year-old healthy man who was a blue collar worker and had been a long-term resident of the malaria endemic area (south of Iran). The recipient experienced an episode of intravascular hemolysis, mild acute renal failure and fever 10 days after operation due to malaria infection which was confirmed by observation of the intraerythrocytic ring forms consistent with Plasmodium falciparum on blood film. He became afebrile and completely improved by antimalaria therapy and a blood film collected 9 days after diagnosis was reported to be negative. We speculated that severe anemia and febrile illness in our recipient immediately after transplantation was due to malaria transmitted through the renal allograft. To our knowledge, this is the first reported case of malaria transmission from donor after kidney transplantation in Iran.
P-148
DID PROPHYLACTIC MONOCLONAL ANTIBODIES INJECTION CAN HELP KIDNEY GRAFT SURVIVAL
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The aim of this study is to evaluate the role of monoclonal antibodies (DACLIZUMAB) in early and late kidney graft survival and prevention of graft loss, compared with the group who did not receive Daclizumab. 57 kidney transplanted patients enrolled in this study, who were admitted and transplanted in Kidney Transplantation Unit, Sina Center, Tehran, since April 2007 to March 2008. Preoperatively, all were received induction protocol (oral prednisolone + mycophenolate mofetil + cyclosporine-A). 23 patients were injected 1 mg/kg daclizumab (within 24 hours before, and 14 days after transplantation). The evidence of delayed graft function (DGF), acute rejections, therapeutic pulse prednisolone, or anti-thymocyte globulin (ATG), CMV infection, episodes of UTI, early graft function (on discharge creatinine), and late graft function (6-16 months postoperatively) were evaluated between two groups. SPSS version 16 software and t-test were used as statistic method for analysis. The age range in injected group was (18-61 years), and in non injected group was (13-60 years). The evidence of DGF was 4% vs. 3%, reversible acute rejections was 34% vs. 14.5%, irreversible acute rejections was 0% vs. 9% (p-value < 0.05) in injected and non injected groups respectively. Therapeutic ATG used in 21% vs 23%, and pulse prednisolone 26% vs. 20% respectively. The range and mean creatinine on discharge (early graft function) was (0.9-4) 1.4 mg/dl vs. (0.5-3.5) 1.35 mg/dl, while the last (6-16 months) creatinine was (1-2) 1.35 mg/dl vs. (0.5-2.7) 1.2 mg/dl, and the highest creatinine level through this period (1-2.7) 1.76 mg/dl vs. (1.1-3) 1.74 mg/dl in injected and non injected group respectively. The evidence of CMV infection was 30% vs 35%, and UTI was 17% vs. 19%. Prophylactic injection of Daclizumab has an effective role in improvement of early graft survival and prevention of irreversible acute rejection also can help to make acute rejection amenable for therapy and cure. To evaluate the real role in long term survival, extended posttransplantation followup is needed.

P-149
ACTIVE MANAGEMENT OF POST-RENAL TRANSPLANTATION BK VIRUS NEPHROPATHY – A PRELIMINARY REPORT
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There is no active treatment for post-renal transplantation BK virus nephropathy (BKVN) proved to be effective so far. Leflunomide, intravenous immunoglobulin (IVIG) and ciprofloxacin are still under investigation as active measures for BKVN treatment. The aim of this study is to assess the efficacy of active management for BKVN on graft outcome after one year. Renal transplant recipients (RTR) with positive BKV-PCR in urine and blood twice underwent graft biopsy to confirm BKVN. Once BKVN is diagnosed, antimetabolites (mycophenolate mofetil or azathioprine) were changed to leflunomide and a course of IVIG and oral ciprofloxacin were given followed by serial monitoring of creatinine clearance (CCI), BKV-PCR in urine and blood. Eighteen RTR were reviewed, 72% were males, one RTR received the second renal transplant, deceased donors were 50%, mean HLA mismatches was 3.6, all RTR received induction therapy (61% thymoglobulin and 39% basiliximab) and 61% received antirejection treatment before diagnosing BKVN. Maintenance immunosuppression was prednisolone (93%), MMF as 2 gm daily (93%), Tacrolimus (61%), CsA (33.5%) and sirolimus (5.5%). Baseline mean CCI was 35.6 ± 11.5 which was reduced to 29.3 ± 17.3 ml/min/1.73 m² at one year (p 0.012). According to baseline CCI value above and below 40 ml/min/1.73 m², patients were divided into two groups; 9 RTR in each with mean CCI 44.5 and 25.3 ml/min/1.73 m² for group 1 and 2 respectively. At one year, mean CCI was reduced to 42.6 ml/min/1.73 m² (p 0.279) for group 1 and 16.7 ml/min/1.73 m² (p 0.016) for group 2. Three grafts were lost by the end of the study (16.7%), all were in group 2 (p 0.031). In conclusion, lack of regular screening, late diagnosis and heavy immunosuppression are predisposing factors for development of BKVN. Active treatment for BKVN by leflunomide, IVIG and ciprofloxacin may improve graft outcome at one year if given early before significant deterioration of graft function occurs.
POST-TRANSPLANT DIABETES MELLITUS: INCIDENCE AND RISK FACTORS

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Post-transplant diabetes mellitus (PTDM) is a frequent and serious complication in renal transplantation. Estimates of the incidence of PTDM after renal transplantation vary between 2% and 54%. The aim of the present study was to evaluate the incidence and risk factors of PTDM in our renal transplant patients. In this study, 102 consecutive non-diabetic patients (male/female = 62/40; age, 38.6 ± 14.5 years) with end stage renal disease (ESRD) who received kidney transplantation for the first time at our centers since 2005 were evaluated. Follow up was 12 months and two patients passed away during this time. All patients received the same protocol of immunosuppressive therapy. PTDM was defined according to the 2003 American Diabetes Association and World Health organization experts committee definition. In total, 10/100 patients (10%) developed PTDM at 12 months following renal transplantation. Patients with post-transplant diabetes mellitus were significantly older (P = 0.013) and had higher body mass index (P = 0.001). There were significant differences (P < 0.05) between PTDM and non-PTDM patients in respect of systolic blood pressure, serum triglyceride, duration of renal replacement therapy before transplantation and peritoneal dialysis as previous renal replacement theraph. There were no differences between two groups with regard to positive family history of diabetes mellitus, gender, and positive history of acute rejection, positive history of steroid pulse therapy and etiology of ESRD. On performing multivariate analysis, the only parameter found to be associated with PTDM was the body mass index (P = 0.04). The incidence of post-transplant diabetes mellitus in our renal transplant patients was 10% at 12 months following transplantation and the most important factor associated with PTDM was a higher body mass index (P = 0.04).

THE EFFECT OF ONE SIMPLE POLICY ON INCREASE OF BRAIN DEATH ORGAN DONATION

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Organ procurement is the building block for lung transplantation monument. Having a good achievement requires sustained surveillance, proper planning and paying attention to minute details. We review here the effect of implementation of one simple policy on organ procurement rate at Organ Procurement Unit of Shaheed Beheshti University of Medical Science, Tehran, Iran. The organ procurement unit of Shaheed Beheshti University started its activity in December 2004. The unit established some educational workshops regarding brain death and organ procurement, mostly for ICU staffs. The aim of the program was to enhance the diagnosis and report of brain death from referring hospitals. In each hospital one coordinator, ICU head-nurse or supervising nurse, takes the responsibility of reporting the cases of definite or suspicious brain death to the unit for proper diagnosis and follow-up. In October 2006, a simple new policy was implemented. Based on which, one the organ procurement unit staffs made daily phone calls to authorities in-charged in all hospitals and asked about any case of brain death or deep coma. We reviewed the brain death registry to see if this policy was successful in diagnosis and recruiting new cases of brain death. For statistical analysis we used independent sample T-test. From total 93 brain dead organ donations until July 2008, 31 cases donated before the specified date and 62 donated after that date. The mean number of monthly organ donations was 1.6 ± 1.1 cases before and 2.8 ± 1.9 cases after the specified date. There mean number of annual donation was significantly higher after implementing the new strategy (p=0.013). We observed that a simple follow up policy by phone calls has nearly doubled the brain death organ donation rate in a short period of time. Such simple yet very effective policies could have implemented in other centers. We conclude that paying attention to some minute details may yield a great benefit for organ transplantation system.
P-152
LYMPHOCELES AFTER RENAL TRANSPLANTATION: STUDY OF RISK FACTORS
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The purpose of this study is identifying lymphocele’s risk factors after renal transplantation. During 20 years (between 1986 and 2008), 377 renal transplantations were performed in our institute. Thirty cases of lymphocele were detected (8%). We have analyzed the different risk factors that can correlate with this complication by reviewing the different parameters of donors, receivers, and the intervention. A statistical study was made. Five risk factors of lymphocele were identified: age of 35 years or more, cadaver kidney, ischemia more than 24 hours, immunosuppressive treatment: mycophenolate mofetil (Cellcept®) or ciclosporin. The only significant and independent risk in the multifactor analysis was the cadaver origin of the transplanted kidney. We have noted in our study that the cadaver origin of the transplanted kidney may play an important role in the genesis of lymphocele after renal transplantation. A good preparation of the cadaver kidney and the ligation of its lymphatic vessels can help to reduce this complication. This should be confirmed in larger series.

P-153
LONG-TERM FOLLOW-UP OF RENAL TRANSPLANT PATIENTS WITH RENAL ARTERY STENOSIS TREATED BY PERCUTANEOUS ANGIOPLASTY
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The incidence of transplant renal artery stenosis (TRAS) in renal allografts varies from 1% to 23%, we sought to examine its incidence, and effect of treatment options on outcome and long-term effect on hypertension and renal function. Within a 7-year time period we evaluated 12 patients 8 males and 4 females, average age 40.77 +/- 10.97 (24-56) years. who had undergone renal transplantation and subsequently were diagnosed with refractory hypertension and transplant dysfunction suggestive for possible transplant renal artery stenosis. Color Doppler ultrasonography and CT angiography and in some cases conventional angiography was performed. After exclusion of 3 technical failures, 9 PTRAs were followed at 1 month, 6 months and 1-3 years after PTRA. Hypertension improvement was defined as mean arterial pressure (MAP) decrease of at least 15% from the pre-PTRA value. Graft function was evaluated by serum creatinine (Scr) levels, and the improvement was defined as a 20% change. PTRA technical success was 66%. In 9 kidney recipients at the end of follow up, blood pressure improved in 65.2% of patients (MAP decreased from 118 +/- 18.54 to 106 +/- 14.15 mmHg), but no patient remained normotensive and medication free. Graft function improved in 66% of patients and was stabilized in 33.3% of them (average Scr before PTRA: 2.6 +/- 0.46, after PTRA: 1.9 +/- 0.35mg/dl). There was no complication and mortality. In conclusion PTRA in kidney transplant recipients are effective mainly in preserving graft function.
PULMONARY HYPERTENSION IN PATIENTS WITH END STAGE RENAL DISEASE UNDERGOING RENAL TRANSPLANTATION

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Pulmonary hypertension (PHT) has been reported to occur in a considerable proportion of patients with end stage renal disease (ESRD). It is a progressive condition of the pulmonary circulation and poses prognostic importance. In this study we sought to investigate the prevalence and the predictors of PHT in patients with ESRD undergoing renal transplantation. The records of 500 adult patients who underwent renal transplantation at our institution were retrospectively evaluated. Clinical and demographic data and laboratory results were noted. A comprehensive Doppler echocardiographic examination was performed to all patients as part of the preoperative assessment. Systolic pulmonary artery pressure (SPAP) was calculated using Bernoulli equation and a value of >30mmHg was accepted as PHT. The mean age of the study population was 31.6 ± 10.2 years. The mean duration of dialysis was 40 months, and 432 patients (86.4%) were on hemodialysis (HD), 68 (13.6%) were on peritoneal dialysis (PD). PHT was detected in 85 (17%) patients, the mean SPAP of whom was 46.7 ± 8.7mmHg (range: 35-75mmHg). The mean age, sex, laboratory variables were similar between patients with and without PHT (P>0.05 for all). The mean duration of dialysis therapy was longer in PHT group than those with normal SPAP (50.8 vs 38.5 months; P=0.008). Concerning the type of dialysis, the ratio of patients having PHT was higher in HD group compared to those on PD (18.8% vs 5.9%; p=0.008). The prevalence of chronic obstructive pulmonary artery disease, asthma, smoking, hypertension, diabetes mellitus did not differ between patients with and without PHT (P>0.05 for all). The findings of this study reveal that PHT is a common clinical condition in patients with ESRD evaluated for renal transplantation, and time being on renal replacement therapy and hemodialysis as the type of dialysis are associated with higher prevalence. Since it may be of prognostic importance in patients undergoing renal transplantation, a careful preoperative assessment including a comprehensive Doppler echocardiographic examination is needed to identify PHT.

LAPAROSCOPIC LIVE- DONOR NEPHRECTOMY: 2 YEARS EXPERIENCE OF SHIRAZ TRANSPLANT CENTER

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Due to the shortage of organ donations and rising number of patients with terminal renal insufficiency, living kidney donation has become increasingly important during recent years. The laparoscopic live-donor nephrectomy (LLDN) is the alternative for the conventional open approach which may decrease the surgical trauma to the donor. The aim of this study was to report our experience with this technique. We reviewed demographic data, operation duration, hospital stay duration and post-operative complications in donors and recipients of 100 LLDNs performed in Shiraz transplant unit from August 2006 to July 2008. A retrospective analysis of chemical and biochemical data of recipients was also performed. 30 female and 70 male subjects with a mean age of 35.88 ± 12.21 years were operated during this period. The mean operative time for donor nephrectomy was 138.30 ± 31.92 (60 to 205) minutes and for recipients was 87.66 ± 11.79 (75 to 120 minutes), with mean warm ischemic time of 5.19 ± 1.76 (2 to 8) minutes. The donors’ median hospital stay was 28.34 ± 8.31 (24 to 72) hours. Five donor operations were converted to open nephrectomy because of uncontrolled bleeding or abnormal anatomy. There was no need for blood transfusions or reoperations in the donors. Median hospital stay for recipients was 9.44 ± 3.61 (5 to 22) days. BUN and Creatinine decreased from preoperative 10.46 ± 3.73 and 66.10 ± 25.16 to 1.39 ± 0.38 and 29.64 ± 8.83 mg/dl at discharge. Renal graft was rejected in 2 cases due to immunologic causes without response to any intervention. There was no vascular thrombosis in the transplanted kidneys. LLDN is a viable alternative to the standard open nephrectomy and will have a positive impact on the donor pool by minimizing disincentives to live donation. The results of our program were acceptable and this approach may be the procedure of choice in the future in our center.
RESULTS OF LUNG TRANSPLANTATION IN IRAN

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One of the most noteworthy achievements in the contemporary epoch is lung transplantation which is a very difficult kind of transplantation because of complexity of the operation and coordination of diverse therapeutic teams to prevent infection, inhibit immune system to avoid recurrent rejections, and treat complications of the surgery. In Iran lung transplantation has been implemented since April 2000, but a general report of the outcome has not been published yet. This study explains the surgical methods, difficulties, and results of lung transplantations in Iran. The data were collected from patients’ files, clinical visits, and telephone interviews. Studied variables were method of the surgery, morbidity and mortality due to the surgery, final morbidity and mortality, and final outcome. Final outcomes were categorized into good, acceptable, and bad. The good result refers to a patient who suffered no major complication after the surgery and was completely satisfied. The acceptable result indicates patient’s satisfaction in spite of some remarkable complications after the surgery and bad result means no satisfaction of the patient from lung transplantation. 21 patients underwent lung transplantation in a 10 year period. The first 5 patients were operated in Imam Khomeini Hospital (Tehran) and the rest 16 underwent the surgery in Massih Daneshvari Hospital. There were 13 males and 8 females with a mean age of 40.1 years (ranging from 18 to 64 years). 18 patients underwent transplantation of one lung via posterolateral thoracotomy, while 3 patients underwent transplantation of 2 lungs via bilateral transverse thoracotomy incisions (Clamshell). Pneumonectomy technique was carried out by ligating and cutting lobar branches of vessels and cutting the main bronchi 2 rings proximal to its bifurcation. Implant method consisted of bronchial anastomosis with continuous Vicryl sutures and vascular anastomosis with continuous Prolene sutures. From the 11 patients who did not survive after transplantation, 6 individuals expired because of technical problems like prolonged ischemic time and inappropriate preservation of the graft, while after 2004, only one death occurred due to technical problems. Two patients passed away after 9 and 10 months mostly due to poor socioeconomic condition which led them to ineffective therapy. From 10 survived cases, 9 patients had a good result and in one case an acceptable result was obtained. 13 complications were seen in 11 patients (52.3%) as below: arterial anastomotic stenosis (2 cases, 15.4%), bronchial anastomotic stenosis (1 case, 7.7%), suture site hematoma (1 case, 7.7%), bleeding of surgical site (2 cases, 15.4%), extensive cervical and thoracic emphysema (3 cases, 23%), and pneumothorax (4 cases, 30.8%). The outcomes of lung transplantation in Iran have improved during 2000 to 2008. Results of the surgery have been good in most cases of the survived patients. Surgical techniques of lung transplantation in Iran have been attained and implementation of this surgery is feasible in our country.
**P-158**

**ONE KNOT ONE SUTURE TECHNIQUE IN THE RENAL VASCULAR TRANSPLANTATION**

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The aim of this study is to evaluation of safety and complication rate of one knot one suture technique in the transplantation. Between May 2006 to June 2008 four hundred renal transplantation were done in the Labafinejad hospital, Shaheed Beheshti University of Medical Science, Tehran, Iran and 150 patients roll into the study randomizely. In these patients demographic data, anastomosis time, systolic and diastolic pressure, number of graft artery, anastomosis sites, serum creatinine, complications and follow up time were analyzed retrospectively. Mean age was 37 years (6 – 71). 97 patients were men (%67.7) and 53 patients were women (%35.3). Mean follow up was 18.5 months (4 -26). Arterial anastomosis time varied between 6-9 minutes (mean 7) and vein anastomosis time varied between 7-10 minutes (mean 8). Blood systolic pressure vary between 90 – 170 mmHg (mean 130 mmHg) and diastolic pressure vary between 50 -110(mean 75mmHg).144 graft has one artery (%96) and remain has two arteries(%4).Sites of artery anastomosis were: common iliac in 77 (%47/5), internal iliac in 66 (%44),external iliac in 8 (%5/3), aorta in 4 (%2/7) and inferior mesenteric artery in 1 (%0.7). Vein anastomosis sites included external iliac in 146 (%97/4), common iliac in2 (%1.3) and inferior vena cava in 2 (%1.3). Number of the first ,second and third transplantations were 146 (%97.3), 3 (%2) and 1 (%0.7) respectively. Rate of serum creatinine level vary between 0.5 – 3.5 mg/dl (mean 1.5 mg /dl). There isn’t any vascular complications in follow up period .Rejection occur in 4 (%2.7) and one patient return to dialysis. In conclusion, One Knot One Suture is a safe, rapid and with the low complication rate Technique

**P-159**

**HEPATIC ABSCESSES AFTER LIVER TRANSPLANTATION: 1997–2008**

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Infections following solid-organ transplants are a major cause of morbidity and mortality. Management may be problematic and is often based on experience with hepatic abscess in nontransplant patients. We reviewed our experience with hepatic abscess in liver transplant recipients to assess their presentation, clinical features, treatment, and outcome. A retrospective review of all liver transplantations at Namazi Hospital Transplant Center from September 1997 through September 2008 was performed. The follow-up period ranged from 8 months to 11 years. Diagnosis of hepatic artery thrombosis (HAT) was confirmed by angiography and liver abscess (LA) was documented by ultrasonography. Percutaneous drainage of the abscess was performed using conventional techniques. Hepatic arterial reconstruction (if present) was performed using conventional techniques, preserving all replaced and accessory arterial vasculature. Of 560 liver recipients, we identified 4 patients who had experienced 6 episodes of hepatic abscess. Median time from transplant to hepatic abscess was 5.7 months (range 1–9 months). The predisposing factor was hepatic artery thrombosis (HAT) and bile duct anastomotic stricture, prior episodes of bacteremia (each in 1 patient). Clinical presentation of hepatic abscess was similar to that described in non-immunosuppressed patients. Drug history was the same in all patients. Pretransplant diagnoses included Hepatitis B cirrhosis, autoimmune hepatitis, Caroli’s disease and cryptogenic cirrhosis. Liver aspirates showed E.coli in 3 cases and was unknown in one case. Patients received an average of 6 weeks of intravenous antibiotic therapy. Percutaneous drainage was successful in 3 cases who had single abscess. One patient died due to internal bleeding and liver failure, although 3 times percutaneous drainage was done for him. In conclusion, hepatic abscess, a rare complication after liver transplantation, was associated with hepatic artery thrombosis and anastomosis stricture. Mortality was higher than in patients who had not undergone transplantation. Prolonged antibiotic therapy and drainage are required to improve the outcome in these patients.
P-160
ENDOGENOUS ASPERGILLUS ENDOPHTHALMITIS OCCURRING AFTER LIVER TRANSPLANTATION- A CASE REPORT

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Endogenous Aspergillus endophthalmitis (AE) is a rare complication of invasive aspergillosis (IA) in transplant patients. In this report, we describe a patient who underwent liver transplantation because of drug-induced cholestatic cirrhosis who developed AE 2 weeks after the surgery. The patient was a 22 y/o male who received right lobe of the liver from his father. The operation was uneventful but the patient developed signs and symptoms of small-for-size syndrome after second day of the surgery. The patient received intense immunosuppression with methylprednisolone for 3 days, tacrolimus and mycophenolate mofetil (MMF) from the first day after the operation and ceftriaxone and metronidazole as prophylactic antibiotics. Because of signs of respiratory distress with pneumonia vancomycin and amphotericin B added empirically to his regimen. PCR for aspergillus DNA in the blood was positive. The patient received 1 course of methylprednisolone pulse therapy for signs of acute rejection at 10th day and tacrolimus changed to sirolimus because of rising serum creatinine and convulsion. After 2 weeks the patient’s symptoms improved and liver function tests were normal but the patients complained from sudden intense pain in the left eye with unilateral blurred vision, redness and other signs of endophthalmitis in the eye examination by ophthalmologists. Visual acuity decreased to light perception after 24 hours. AE was confirmed by microscopy and culture of the vitreous fluid and retinal biopsy. Despite changing amphotericin to intravitreal injection of voriconazole followed by intravenous voriconazole and transient resolving of the symptoms, no improvement was seen in visual acuity, and pain and signs of inflammation of the eye recurred after 2 weeks. At last the patient underwent enucleation for resistant infection and fear of involvement of the other eye by aspergillosis or sympathetic ophthalia.

P-161
THE EFFECT OF ISCHEMIC PRECONDITIONING OF PANCREAS IN REDUCING THE SEVERITY OF ISCHEMIA-REPERFUSION INDUCED PANCREATITIS IN RATS

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The role of ischemia/reperfusion injury in pathogenesis of acute pancreatitis is still ill defined. It is accepted, however, that ischemia/reperfusion induces the development of post implantation pancreatitis that is responsible for considerable morbidity after pancreas transplantation. Preconditioning by brief exposure to ischemia protects the organ against damage evoked by subsequent severe ischemia. This study has been undertaken to check whether two brief ischemia periods protect the pancreas against severe ischemia/reperfusion induced pancreatitis. This study was performed on 30 male rats. Rats were divided into three groups (10 rats in each group). First group (control) underwent laparotomy without clamping of any artery. The second group underwent 30 min clamping of inferior splenic artery and then 1 hour reperfusion of pancreas and third group underwent clamping of inferior splenic artery (2x5 min with 5 min interval) as ischemic preconditioning and then 30 min clamping of inferior splenic artery and then 1 hour reperfusion of pancreas. Exposure to regular 30 min ischemia followed by 1 hr reperfusion led to the development of severe alteration more than other group that underwent ischemic preconditioning. Ischemic preconditioning, applied prior to induction of pancreatitis, caused the reduction in plasma lipase, plasma interleukin-1β and histological signs of pancreatic damage. We concluded that ischemic preconditioning of pancreas reduces the severity of ischemia/reperfusion induced pancreatitis. These effects are partly related to the release of proinflammatory factor interleukin -1β.
IMMUNOSUPPRESSION CESSION DUE TO NON-COMPLIANCE AFTER SUCCESSFUL LUNG TRANSPLANTATION; REPORT OF TWO CASES

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Immunosuppression cessation after lung transplantation is a disaster. Regarding the lack of organs, long waiting list of transplantation and high resource consumption of lung transplantation; any non-compliance to immunosuppressive therapy which ultimately leads to organ and patient loss is greatly discouraging. We report here two cases which stopped their immunosuppressive therapy due to familial problems. Case one: a 49-years old woman which received single lung transplantation in 2003 due to idiopathic pulmonary fibrosis. On postoperative date (POD) 30 the patient was discharged with good condition with CellCept®, cyclosporine and prednisolone as immunosuppressive regimen. Patient attended postoperative follow-ups regularly. On POD 69, patient admitted to the hospital due to fever, infection and vascular rejection which were treated successfully. Patient discontinued her immunosuppression after 6 months post-transplantation due to familial problems. Afterward, patient re-admitted on POD 249, 270 and 360; all of them with acute rejection components which were treated accordingly. The patients ultimately died one year after transplantation with graft rejection and concomitant infection. Case two: a 31-years old woman with bronchiectasia who was transplanted on 2006. Patient was discharged on POD 44 with good condition. 1.5 years later patient was re-admitted due to graft rejection and infection. She declared that her immunosuppression was discontinued for 10 days, due to familial problems. Patient was discharged with good condition but re-admitted again after 2 weeks and one month. At her last hospitalization, grade IV graft rejection accompanied with bronchiolitis obliterans-organizing pneumonia and pseudomonas infection were detected which ultimately led to death after 21 months of transplantation. These two experiments highlight the role of family support on the outcome of lung transplantation. As our experience shows, females are more prone to negative effect of familial problems on the outcome of lung transplantation.

BONE AND FAT EMBOLIZATION IN DONOR AS THE CAUSE OF DEATH IN LUNG RECIPIENT; REPORT OF ONE CASE

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The cause of death in organ donors may have a great impact on organ recipients’ outcome. Trauma is the prevailing cause of death in brain dead patients in Iran and many other countries. Such patients may have many complications, among them vascular embolization with fat and other tissues. We describe here a case of vascular embolization in donor and its consequence on the recipient’s outcome. The recipient was a 36-years-old woman with pulmonary fibrosis. She received a single lung transplant from a brain dead patient with who died because trauma. Donor had no obvious fractures and the oxygen challenge test was ideal. The harvested lung was normal in bronchoscopy and was clear in plain chest radiography. The day after lung transplantation, the recipient was extubated successfully. O2 saturation was normal. In CT-Scan, There was a fixed infiltration in the base of the transplanted lung. In day 5 post-transplantation, the infiltration got expanded and patient developed acute respiratory distress syndrome (ARDS). Patient’s condition deteriorated rapidly and he died on day 10 of transplantation due to ARDS. The pathology result for the brain dead patient, which was obtained from another patient’s lung, got ready after the recipient’s death and showed massive vascular fat and bone embolization. In the mentioned case, all criteria for lung harvest from brain dead patient were met. Looking for embolization is not among the criteria for lung transplantation if chest radiography is clear and O2 challenge test is acceptable, but we observed a poor outcome in recipient due to bone and fat embolization of the donor’s lung. Such complications when transplanting from a traumatic patients should be kept in mind.
SOURCE OF KIDNEY, A FACTOR AFFECTING ON POST TRANSPLANT HEALTH CARE UTILIZATION

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The effect of accurate donor selection on the post-renal transplantation costs has not perfectly been studied. In the present study, we compared three types of kidney donors: Living Unrelated Donor (LURD), Living Related Donor (LRD) and Cadaver (CAD). A longitudinal study was performed on 212 stable kidney recipients in Bagiyatallah hospital, Tehran, Iran, 2005-2006. Patients were divided into three groups: LURD (n=168), LRD (n=24) and CAD (n=20). Patients were matched for age, sex, cause of ESRD and duration between transplantation and including in the study (p>0.05). Stable patients who had a good functioning graft and at least 6 months had passed after their transplantation, were included in the study. Recipients were followed for post-transplantation health care utilization (hospital admission, emergency department visit, outpatient physician visit and home based nursing) for 12 months. A statistically significant higher rate of hospital admissions in LURD (60%) than LRD (40%) or CAD (43%) recipients was seen (p<0.05). LURD recipients had a higher tendency to be visited in the emergency departments (41.9%) in comparison with LRD (30.0%) or CAD (16.7%), (p<0.05). There was no significant difference in outpatient physician visits and home based nursing among recipients of different source of kidney. According to our results, Iranian model of transplantation may be imposed to the higher costs, by the selection of LURD as the most common source of donor. We encourage the other countries in the MESOT region to consider the possible effects of their common sources of kidney on the health care costs.

LIVER TRANSPLANTATION IN THE MANAGEMENT OF ALVEOLAR ECHINOCOCCOsis

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Hepatic alveolar echinococcosis is an infectious disease caused by the larval stage of Echinococcus multilocularis. E. multilocularis grows primarily in the liver of an infected person and develops as a tumorlike lesion. In advanced cases, the organisms infiltrate every organ neighboring the liver and spread hematogenously to distant organs such as lungs and brain. Surgical resection and liver transplant are accepted treatment options for early-stage and advanced disease respectively. In this article, we present 2 patients with an advanced stage of alveolar echinococcal disease invading both lobes of the liver and neighboring vital structures including the inferior vena cava. Despite the technical difficulty of the surgery, both patients were successfully treated with a living-donor liver transplant. In conclusion, liver transplant should be accepted as a life saving treatment of choice for patients with alveolar echinococcosis whom had lost the chance of medical or surgical treatments.
LIVER TRANSPLANTATION FOR HOMOZYGOUS FAMILIAL HYPERCHOLESTEROLEMIA

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Homozygous familial hypercholesterolemia (HFHC) is a rare inherited condition with an incidence of 1 in a million. It is associated with severe premature atherosclerosis and early death from cardiovascular complication. Mutation in the gene that encodes the synthesis of the cellular receptor for low density lipoprotein (LDL) is responsible for this metabolic disorder. Currently, the only effective treatment for this disease is liver transplantation, which alone or in association with medications, normalizes plasma cholesterol level. The authors report the results of liver transplantation for 2 cases of HFHC in Shiraz transplant unit, Shiraz, Iran. First case, a 15 y/o boy, received whole liver from a deceased donor and the second an 11 y/o boy who received left lobe from a living donor (his mother). The older boy had severe atherosclerotic heart disease and undergone coronary artery bypass grafting 5 months before transplantation. Both had preoperative plasma cholesterol level higher than 750 mg/dl which didn’t respond to medical therapy. Thyroid and liver function tests were normal. After the operation the patients received methylprednisolone as a pulse therapy followed by oral prednisolone, mycophenolate mofetil and tacrolimus for immunosuppression. Their hospital stay was 24 and 13 days respectively. The lipid concentration returned rapidly to normal range in the 1st week after operation and remained in this range in the first 6 moths of follow-up. In conclusion, liver transplantation offers highly effective treatment for HFHC. It’s better to operate the patients before severe atherosclerotic changes in the coronary arteries. All patients must be undergone complete cardiac evaluation before the surgery.

PORTAL VEIN STENOSIS AFTER PEDIATRIC LIVING-DONOR LIVER TRANSPLANT: LONG-TERM RESULTS

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Portal vein stenosis is a relatively rare complication after liver transplant (LT), which sometimes leads to a life-threatening event due to gastrointestinal bleeding or graft failure. The aim of this study was to evaluate the diagnoses and management of portal vein stenoses in pediatric LT recipients at our center. Between September 2001 and June 2008, 103 living-donor LT (LDLT) procedures were done in 100 children at our center, among which 91 children with a functioning graft at 3 months after LDLT are included in this analysis. Five instances of portal vein stenosis (4.8%) were diagnosed, and these were analyzed retrospectively. The portal vein was anastomosed without a vein graft in all children. The preangioplasty and postangioplasty pressure gradients were recorded. The median age of the patients was 3.1 years (range, 6 months to 11 years); the median body weight was 17 kg (range, 6-37 kg). Portal vein stenoses were detected at 6, 8, 10, 11, and 14 months after LDLT. While splenomegaly and massive ascites were observed in 1 child, the remaining 4 children were asymptomatic at the time of diagnosis. All children were treated with transhepatic balloon dilatation. We did not observe any treatment-related complications. The mean pressure gradient decreased from 13 to 2.06 mm Hg after treatment. Portal venous patency was maintained in all children at 4, 19, 35, 36, and 38 months’ follow-up. There were no recurrences of stenosis during follow-up. In conclusion, percutaneous transhepatic balloon angioplasty is an effective treatment for the portal vein stenoses that occur after LDLT. Our center has had good results with this technique.
P-168
CLINICOPATHOLOGIC EVALUATION OF INCIDENTAL HEPATOCELLULAR CARCINOMA AFTER LIVER TRANSPLANT

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The incidence of detecting hepatocellular carcinoma in a removed recipient liver after a liver transplant is not rare. The aim of this study was to evaluate the incidental hepatocellular carcinoma at our center. We retrospectively analyzed outcomes of 6 patients with incidental hepatocellular carcinoma among 238 patients with liver transplant who had been operated on between September 2001 and June 2008. The proportion of incidental hepatocellular carcinoma was 2.5%. The rate of incidental hepatocellular carcinoma among all hepatocellular carcinoma patients was 14% (36 versus 6). There were 3 children and 3 adults (mean age, 22.6 ± 24.5 years; age range, 1-49 years). Two of these patients were 1 year old. The alpha-fetoprotein level was within the normal range in all patients. Preoperative imaging studies demonstrated regenerative or dysplastic nodules or no specific lesion in all patients. One of the grafts was from a deceased donor, and 5 were from living-related donors. We encountered no complications after the transplants. Pathology findings showed a mean tumor size of 0.94 ± 0.2 cm (range, 0.5-1.2 cm) and multiplicity in 1 patient (16.6%). One patient with multiple tumors had microvascular invasion. According to the TNM staging system, 5 patients had stage-I, and the remaining patient had stage-II, carcinoma. There were no recurrences of hepatocellular carcinoma, and no mortality occurred during a mean follow-up of 33 ± 16.5 months (range 3-49 months). In conclusion, the incidence of hepatocellular carcinoma in patients with cirrhosis who have undergone a liver transplant is similar to that reported in other studies. Incidentally found hepatocellular carcinomas showed less invasive pathology features and better prognoses than did preoperatively detected hepatocellular carcinomas.

P-169
LIVER FAILURE AND THE NEED FOR TRANSPLANTATION IN THREE PATIENTS WITH HEPATOPORTAL SCLEROSIS

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Hepatoportal Sclerosis (HPS) in one the causes of noncirrhotic portal hypertension. In most of the patients, hepatic synthetic dysfunction does not occur, but rarely they may require liver transplantation. In this study, we report the clinicopathologic characteristics of three patients diagnosed as having HPS after examination of the explanted liver among more than 500 liver transplant cases. All of three patients were labeled as other conditions before transplant such as PSC, and cryptogenic cirrhosis. Small liver volume, significant portal fibrosis and phlebosclerosis may contribute to hepatic synthetic dysfunction in these patients.
EXPERIENCE OF THE FIRST 27 LIVER TRANSPLANTATIONS IN TEHRAN UNIVERSITY OF MEDICAL SCIENCES, FAILURES AND SUCCESSES


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Orthotopic liver transplantation (OLT) has been accepted as the standard treatment for end stage liver disease since 1983. Establishment of a new program has specific problems and lessons. From January 2002 to July 2007, 27 OLT were done in Imam Khomeini Hospital Complex, Tehran, Iran. In the first series of 9 cases which was performed within 4 years, the standard technique was done in all except one patient. We changed the procedure to piggy back hepatectomy and cavocavoplasty in the second series of 18 patients except for 1 case. This group was operated on in a 20 months period. There were 5 female patients in the group one and 7 in the latter. Mean age of the patients in the two groups were 28 and 43.3 years respectively. Mean Child-Pugh score was 10.1 in group one and 9.68 in group two. The most common indication for transplantation was hepatitis B followed by cryptogenic cirrhosis. We had 5 (55%) early postoperative mortalities in the first group and 4 (22%) in the second. Causes of death in the first group were intra-operative bleeding, primary non function, postoperative hemorrhage due to DIC (two patients) and Klebsiella sepsis. Four mortalities in the second group were due to primary non function, pulmonary sepsis and heart problems (MI and congestive heart failure). We had no early biliary complication. The mean operative time for the second group was 7:51 with cold ischemia time of 7:16. Outcome of OLT could be rapidly progressed with judicious refinement of technique and increasing number of transplants. 78% one month survival may be an indicator of passing learning curve.

POSTOPERATIVE NON-SURGICAL COMPLICATIONS AFTER DONOR HEPATECTOMY FOR LIVING-DONOR LIVER TRANSPLANTATION


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Although several studies have focused on the surgical complications in donors of LDLT, there are scant data regarding the non-surgical complications that may occur in these patients. The aim of this study was to identify the type and frequency of postoperative non-surgical complications after donor hepatectomy in our series of LDLT. We reviewed the data of 141 consecutive LDLT patients who underwent a lobectomy between May 2002 and September 2007. The data included demographic features, intraoperative and postoperative transfusions, amount of administered intraoperative crystalloid and colloids, intraoperative hemodynamics, preoperative and postoperative laboratory values (renal and liver functions), intraoperative and postoperative urine output, and length of hospital stay. Postoperative non-surgical complications such as respiratory complications (atelectasis, pleural effusion, pneumonia, acute lung injury and pulmonary thromboembolism [PTE]), acute kidney injury (>50% increase in serum creatinine from the baseline), deep vein thrombosis (DVT), cardiac morbidities, and need for transfusions were collected using patient charts. One hundred-six (75.2%) of 141 donor lobectomies had at least 1 postoperative non-surgical complication. Respiratory complications, the most commonly noted postoperative non-surgical complication, occurred in 85 (60.3%) of the patients (pleural effusion, n=84, 59.6%; atelectasis, n=47, 33.3%; pneumonia, n=2, 1.4%; and pulmonary thromboembolism, n=1, 0.7%). The other detected postoperative non-surgical complications were need for transfusions (n=63, 44.7%), acute kidney injury (n=4, 2.8%), deep vein thrombosis (n=2, 1.4%), and urinary retention (n=3, 2.1%). There were no mortalities, cardiac morbidities, or transfusion related complications in this group of patients. Except for pneumonia, DVT, and PTE that were treated successfully, other complications were self-limited and no specific therapies were required. In conclusion, postoperative non-surgical complications were commonly detected in our donors of LDLT. However, these problems were mostly mild and self-limited. Further studies are required to evaluate the risk factors and possible preventive measures of these complications.
Liver transplant is the only treatment for unresectable liver tumors. We present our experiences with using liver transplant to treat 14 children with unresectable liver tumors. Between September 2001 and July 2008, we did 111 liver transplants in 108 children at our center. Fourteen of these 108 children (12.8% ± 6.2 years; age; mean age, 8.2 range, 6 months to 16 years; male-to-female ratio, 8:6) had a preoperatively diagnosed or incidental hepatic tumor that we subsequently analyzed retrospectively. All grafts were obtained from living-related donors. Ten children had hepatocellular carcinoma, 3 had a hepatoblastoma, and 1 had a neuroblastoma causing consumption coagulopathy. The liver tumors were diagnosed before the transplant in 11 children; in 3 children, we identified an incidental tumor. One child had combined hepatic arterial chemoembolization and systemic chemotherapy, and 5 had systemic chemotherapy before the liver transplant. Two children received a right lobe graft, 7 received a left lateral segment graft, and the remaining 5 received a left lobe graft. The pathology findings demonstrated a mean tumor size of 3.3 ± 2.5 cm. The number of tumors was less than 5 in 9 children, and more than 10 in the remaining 5 children. The largest tumor size was 11 cm. Four children had microvascular invasion. One child who had a neuroblastoma causing consumption coagulopathy received systemic chemotherapy after the liver transplant. There have been only 2 tumor recurrences after a liver transplant. One child with a hepatoblastoma experienced lymphoproliferative disease 22 months after his liver transplant. During a mean follow-up of 29.7 ± 15.5 months, 2 children died. At the time of this writing, the remaining 12 children are alive with good graft functioning. In conclusion, liver transplant is a good option for pediatric patients with unresectable hepatic tumors and provides long patient and disease-free survival.

Technique in orthotopic liver transplantation (OLT) consists of total excision of retrohepatic inferior vena cava (IVC) during native hepatectomy. Clamping of the IVC above renal veins without veno-venous bypass (VVB) causes renal hemodynamic changes. There is controversy over the influence of standard technique without VVB on the postoperative renal function. The objective of this study is evaluation of the effect of hepatectomy technique on the postoperative renal function. From 253 cases of OLT between June 2006 and July 2008 in Shiraz transplant unit, only 15 cases (5.9%, 10 male, 5 female, 38.07 ± 11.69 y/o) operated by standard technique without VVB. Patient demographics, factors including cold ischemic time (CIT), warm ischemic time (WIT), operative time, transfusions, blood loss, and early postoperative renal function were assessed retrospectively. Criteria for acute renal failure were serum creatinine (Cr) >1.5 mg/dL, an increase in baseline serum Cr by 50%, or oliguria requiring renal replacement therapy (RRT). The cause of end stage liver disease was cryptogenic cirrhosis in 4, hepatitis B in 3, autoimmune hepatitis in 3, primary sclerosing cholangitis in 2, hepatitis C in 2 and Budd-Chiari Syndrome in 1. All patients received liver from deceased donor and none of them required venovenous bypass during the operation. Minimum mean arterial blood pressure of the patients during clamping was 75 ± 19 mmHg. Mean preoperative plasma Cr was 0.99 ± 0.45 mg/dl. During the first week after transplantation 7 patients (46.6 %) developed ARF, and 3 of which required RRT. 4 of the patients died 1 from adult respiratory distress syndrome, 2 from sepsis and 1 from recurrent cholangiocarcinoma after 3 months. In all other patients the plasma Cr returned to normal after 3 weeks and during the follow-up period (6.55 ± 3.10 months). In conclusion, the use of classic technique without VVB for OLT may increase the rate of postoperative renal failure but this complication is mostly reversible in the short-term follow-up.
ALTERNATIVE HEPATIC ARTERY RECONSTRUCTION IN A PATIENT WITH LIVER TRANSPLANT: A CASE REPORT

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Despite improvements in the surgical techniques used for liver transplants, hepatic artery thrombosis remains the most common vascular complication. Among other factors, a precise, initial, tension-free, vascular anastomotic technique remains a key factor for preventing hepatic artery thromboses. Here, we describe a patient in whom the gap between the graft artery and the recipient hepatic artery was observed intraoperatively as being short; the gap was subsequently managed successfully with an alternate modified radial artery reconstruction technique. A 23-year-old man with hepatic alveolar hydatid cyst underwent a living-donor liver transplant. After determining the gap between the graft left hepatic artery and the recipient proper hepatic artery, we made a search for an alternative source for the vascular graft. However, neither the arterial graft from the donor nor from the patient was viable. We decided to create an interposition graft anastomosis using a radial artery. The left radial artery was subsequently harvested. Seeing that the diameter of the lumen of the radial artery was less than 2 mm, it was double bended, the edges were longitudinally incised parallel to each other, and both arterial segments were sutured together with continuous 7-0 monofilament nonabsorbable suture material. We therefore created a modified arterial interposition graft that was of better quality and wider than the original. An end-to-end anastomosis was done between the donor right hepatic artery and recipient’s proper hepatic artery using a modified radial artery interposition graft. We used a continuous back-wall first technique and anterior interrupted stitches. Arterial blood flow was established successfully. The patient recovered without complications with normal liver function. In conclusion, using a modified radial artery interposition graft as a method for a hepatic artery anastomosis is a safe and significant option for patients and surgeons.

LIVER TRANSPLANT FOR HEPATOCELLULAR CARCINOMA

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Hepatocellular carcinoma, which is the fifth most common malignancy in men and the ninth most common malignancy in women worldwide, accounts for 6% of all malignant lesions. We evaluated our results for doing liver transplants in patients with hepatocellular carcinoma. Since September 2001, 238 liver transplants were performed for 234 patients at our center. Forty-two (9 female, 33 male; age range, 1 year 1 month to 65 years) of these 234 patients with preoperatively or incidentally diagnosed hepatocellular carcinoma underwent a liver transplant at our center. Twelve of the grafts were from deceased donors, and 30 were from living-related donors. Inclusion criteria (independent of tumor size and number of tumor) were no invasion of a major vascular structure and no evidence of extrahepatic disease. In 24 of the patients, the tumors exceeded Milan criteria. According to the Tumor-Node-Metastasis staging system, 7 patients had stage-I, 11 had stage-II, 3 had stage-III, and 21 had stage-IVA1 carcinomas. At the time of this writing, at a mean follow-up of 27.6 ± 17.3 months (range, 2-55 months), 36 patients are well with excellent graft functioning. The longest graft survival in the study subjects is 55 months. There have been 6 tumor recurrences occurring at 3, 4, 5, 24, 26, and 29 months after liver transplant; 3 of these 6 patients are alive with good functioning grafts; the remaining 3 patients died 4, 11, and 19 months after recurrence. Three patients died 1, 1, 22 months after the liver transplant with no evidence of recurrence. In conclusion, when there is no effective treatment alternative other than liver transplant, the procedure may provide long-term disease-free survival for hepatocellular carcinoma patients even with locally advanced tumors. The option of a living-related liver transplant should be given to hopeless patients and their families.
**P-176**

**IMPLEMENTATION OF A NEW LIVING-DONOR LIVER TRANSPLANTATION PROGRAM**

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Living-donor liver transplantation (LDLT) is one approach to reduce waiting list mortality. The technique of LDLT is standardized, but requires excellent expertise in the pre-, peri- and postoperative period. Until 2006, full-size postmortal liver transplantation was the standard technique at our centre. Since 09.11.2006, 23 LDLT were performed including 15 left-lateral segments in pediatric recipients (age 0.6 (0.2-9.7); 1.5 ± 2.3 years) and 8 right lobes in adult recipients (age 57.9 (17.7-69.5); 54.4 ± 16.0 years). The living donor graft was donated by the father (n=11), the mother (n=4), a son (n=3), a cousin (n=2), a daughter (n=1), a nephew (n=1) and a son in law (n=1). Living donor selection criteria were: blood group compatibility, age < 60 years, body mass index < 30, steatosis < 10 % for adult and < 30 % for pediatric recipients, GRBW > 0.7. Donor and recipient survival is 100%, both after a median follow up of 271 (range: 7-601; Mean: 234.4 ± 163.0) days. Living-donor graft survival is 91.3 % after a median follow-up of 196 (range: 7-601; Mean: 217.4 ± 172.3) days. Two recipients required retransplantation due to hepatic artery thrombosis. One LDLT could not be performed; the donor operation was aborted due to biliary variation detected by intraoperative cholangiography. In Conclusion, a new LDLT-program can be safely implicated, if the standards are meticulously followed. However, the basics are a good functioning interdisciplinary transplant team and long-term surgical experience in hepatobiliary and transplantation surgery.

**P-177**

**MALPOSITION OF THE SUBCLAVIEN CATHETER INSERTED BY THE INDIRECT METHOD IN PEDIATRIC LIVER TRANSPLANTATION**

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Introduction: Central venous catheters allow measurement of hemodynamic variables that cannot be measured accurately by noninvasive means and allow delivery of medications and nutritional support that cannot be given safely through peripheral venous catheters. For this purpose many clinicians are using direct or indirect methods for jugular or subclavien vein catheterization. We report a 7.5 month old, 7200 gram female liver transplant recipient with neonatal cholestatic hepatitis. In the operation room with the indirect method right jugular venous catheterization was tried but it failed so again with the indirect (seldinger method) right subclavien vein catheterization was done. While replacing the catheter, no arrhythmias were seen on the monitor. After the aspiration of blood, catheter was fixed at the eighth cm. During the operation, central venous pressure measurements and fluid support was given through this catheter. At the lung graphy which was taken at the end of the operation (approximately 12 hours in duration), the endpoint of the catheter was seen in the right jugular vein. The catheter was used 2 more days for fluid replacement and was later removed. Because of the different vessel sizes, more angularizations of vessels and short subclavien and jugular veins, central venous catheterizations are more difficult in babies and children. Malpositioning of the catheter is the most common reason of the early catheter malfunctions. In conclusion, we believed that catheterization with the direct method can decrease the malposition rates of the catheters.
Despite the close relationship of sCD30 with Th2-type immune responses, some studies suggested that CD30+ cell activation represents a novel graft rejection pathway in which both Th1 and Th2 cytokines are involved. In this study we investigated the relevance of donor bone marrow cells (DBMC) infusion and serum levels of IFN-γ, IL-10 and sCD30 in kidney allograft recipients. Pre and post-transplant sera of 40 live donor renal transplant including 20 patients with DBMC infusion (2.1 ± 1.3 × 10^6 MNCs/body) and 20 controls (kidney allograft alone) were analyzed for sCD30, IFN-γ and IL-10 levels using ELISA kits and evaluated the levels in relation to the outcome of allograft. Patients who developed acute rejection (AR) (3/20 in DBMI and 6/20 in controls) showed an increase in sCD30, IFN-γ and decrease in IL-10 post-transplantation compared to non-rejecting. The only significant differences were found for sCD30 and IFN-γ levels in controls (59.54 vs. 30.92 ng/ml, P=0.02 and 11.91 vs. 3.01 pg/ml, P=0.01 respectively). Measuring of sCD30 on days 14 and 30 revealed a great decline compared to day 5 in all patients of study and level of decrease was more perceptible in DBMI. Comparison of pre and post-transplant levels of IFN-γ, IL-10 and sCD30 in patients with AR showed a higher level but not significant in post-transplant sera except for IFN-γ in controls (6.37 vs. 11.93, P = 0.01). In DBMI, increased serum sCD30 was shown to correlate with increased IL-10 levels for rejecting and non-rejecting patients (r = 1.00, P = 0.01 and r = 0.49, P = 0.04 respectively). Our results indicate that increased serum sCD30, IFN-γ and IL-10 levels post-transplantation are associated with allograft rejection in all patients. Also, post-transplant sCD30 was correlated with IL-10 but not IFN-γ in DBMI patients. Lower levels of post-transplant sCD30 and IFN-γ compared to controls might be due to the immunoregulatory effect of infused cells on alloimmune response in recipients.
ROLE OF HEMATOLOGICAL AND BIOCHEMICAL PARAMETERS FOR MONITORING THE BK VIRUS INFECTIONS IN HEMORRHAGIC CYSTITIS COMPLICATED BONE MARROW TRANSPLANT PATIENTS

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Hemorrhagic cystitis (HC) is an important cause of morbidity and mortality in Bone Marrow Transplant (BMT) recipients. It’s incidence has varied from 7-70% in BMT patients. HC presentations are classified to early and late onset and one of the causative agents of HC late onset is viral infections. In this research for measuring the role BK virus (BKV) infections in late onset of HC, the prevalence of this viral infection in BMT recipients were determined. Also the role of another risk factors including: hematological and biochemical characteristics, clinical conditions, grade of GVHD in HC presentations were determined. We cohort and retrospectively studied 30 and 24 BMT recipients and donors respectively. The number of 293 EDTA treated blood samples and 293 urine samples were collected from BMT recipients and donors. One sample was collected pre-transplantation from BMT recipients and donors and also one sample per week for 100 days from BMT recipients post-transplantation BKV- monoplex in house PCR were proceed for determination of these viral prevalence in HC incidence in BMT patients. Also all the data of this investigation were statistically analyzed with version 12 of SPSS. The median incidence of HC in BMT recipients with measurement the grade of HC and with sonography records of bladder bleeding were 53.3% and 36.7% respectively. Significant correlations were found between BKV-PCR positive results with HC presentation. Significant correlations were detected between hematological characteristics included: WBC and platelet counts and hemoglobin concentration and also biochemical characteristics like: creatinine, direct bilirubin and total bilirubin levels and liver function tests with BKV-PCR positive results and HC presentation. In conclusion, for significant correlations of HC clinical presentations with positive results of BKV-PCR and also with results of hematology and biochemical tests, monitoring of these parameters have a critical role in management of preventive and therapeutic protocols for HC disorder in BMT recipients.

FREQUENCY, RISK FACTOR AND OUTCOME OF ACUTE KIDNEY INJURY FOLLOWING BONE MARROW TRANSPLANTATION IN IRAN-TEHRAN DR SHARIATI HOSPITAL

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Bone marrow transplantation (BMT) is a major treatment for malignant and hematologic disorders. This procedure is associated with a high morbidity and mortality such as acute kidney injury (AKI). Many factors, such as therapeutic agents, irradiation and graft versus host disease (GVHD) can cause AKI. Bone marrow transplantation conditioning therapy in Iran is based on drugs, such as busulfan and cyclophosphamide and without radiation therapy. The aim of this study was to evaluate the frequency, risk factors and mortality of AKI among patients who underwent BMT. To evaluate the frequency of AKI and its outcome, 375 patients were followed prospectively for 180 days from time of transplant. Acute kidney injury was defined as doubling serum creatinine from baseline at any time during the first 180 days post-transplant. The risk of AKI in relation to non based total body irradiation conditioning regimen, type of graft (allograft, autograft) and comorbidity, graft versus host disease (GVHD), drug toxicity and veno-occlusive disease (VOD) was examined in 375 BMT patients. One hundred twenty–two patients (37.6%) developed AKI at a median of 18 days after transplant. Higher frequency was observed in patients who received cyclosporine A (40%) and in allograft BMT those patients with gastrointestinal graft versus host disease (GIGVHD) (47.3%). The remainder was for amphotericine B, veno-occlusive disease (VOD), hemolytic uremic syndrome (HUS). In conclusion, the frequency of AKI remains high. Cyclosporine A and amphotericine B and presence of GVHD and VOD increased the risk of ARF within the first 180 days after BMT.
P-182

RENAL INVOLVEMENT FOLLOWING BONE MARROW TRANSPLANTATION IN CHILDREN: A SINGLE-CENTER EXPERIENCE

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Improving survival rates after pediatric bone marrow transplantation will likely result in greater numbers of early and late renal complications. We designed a retrospective study to evaluate the incidence of renal involvement on 120 bone marrow recipients referred to the pediatric nephrology outpatient clinic between 2003 and 2005. These complications were found in 4 cases (3 female and 1 male) including membranous nephropathy (n=2), hemolytic uremic syndrome (n=1) and cyclosporine nephrotoxicity (n=1). The underlying diseases were major thalassemia, aplastic anemia, and leukemia and leukocyte adhesion deficiency (LAD) syndrome. Mean age was 7.3 year. Hemolytic uremic syndrome was occurred in early period (2 months) following transplantation, the rest were seen between 3-12 months. Fortunately, our patient with hemolytic uremic syndrome completely responded to plasmapheresis. Heavy proteinuria in membranous nephropathy cases was significantly reduced by ACE inhibitors. Renal impairment in last case was improved by reducing the dose of cyclosporine. Early diagnosis and prompt management of renal involvement are essential for graft salvage and may greatly improve prognosis.

P-183

IMPACT OF EDUCATIONAL LEVEL ON OUTCOME OF RENAL ALLOGRAFT TRANSPLANTATION: A LONG STUDY

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Kidney transplantation is the treatment of choice for patients with end-stage renal disease requiring renal replacement therapy. Despite improvement of patient and graft survival in the recent decade, it has been hypothesized that people in lower socioeconomic groups have worse outcomes because they are more likely to be non-compliant or receive inadequate treatment. We retrospectively investigated this hypothesis by using education level as a proxy for socioeconomic status in 1731 kidney transplant recipients between 1984 and 2005. Patients were divided to four groups; 1) illiterate (n = 274, 15.8%), 2) under diploma (n = 807, 46.6%), 3) diploma (n = 437, 25.2%), and 4) above diploma (n = 213, 12.3%). Male and female were 1077 (62.2%) and 654 (37.8%), respectively. Women were more likely to be under diploma (459 of 654, 70.1% versus 622 of 1077, 57.7%; P = 0.000). One, five, ten and fifteen-year patient survival rates were 94, 92, 83 and 59 for group 1 + 2, and were 97, 96, 91 and 84 for group 3 + 4, respectively (P = 0.000). Overall mortality rate was higher in recipients who had under diploma when compared to educated patients with equal or higher than diploma (76 of 1081, 7% and 22 of 650, 3.34%; P = 0.001). Furthermore, renal allograft survival were improved in group 3 and 4 compared to group1 and 2, graft survival rate were 87, 68, 44 and 18 versus 78, 59, 30 and 12 at one, five, ten and fifteen years after transplantation, P = 0.000 ; and renal allograft loss was seen more in low educational group (P = 0.000). Our study showed that people in lower socioeconomic groups have worse outcomes. Patients with higher levels of education had improved overall survival.
P-184
QUALITY OF SLEEP IN RENAL TRANSPLANT RECIPIENTS

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Sleep disturbances are highly prevalent in ESRD patients. In this study we sought to evaluate the associations of poor sleep with several genetic, laboratory, treatment and demographic factors in renal allograft recipients using a validated sleep quality questionnaire. A cross-sectional study was conducted on renal transplant patients. Inclusion criteria were age over 18 years, current stable graft function, and competence to give informed consent. Patients with an elevated serum creatinine level or any concomitant acute disease were excluded from analysis. All patients completed PSQI and Ifudu questionnaires for assessment of sleep quality and morbidity measures, and also their data were extracted from our local registry. Kolmogorov-Smirnov test was used for evaluation of distributions. We used Student’s t-test, and Fisher’s exact test for analyses. Mean total PSQI score for the whole patients was 6.5 ± 2.6. Overall 26 (67%) of patients were diagnosed as ‘poor sleepers’ (PSQI total score ≥5) and the remaining 13 (33%) were ‘good sleepers’. Compared to ‘good sleepers’, ‘poor sleepers’ significantly had higher serum phosphate levels and ESRD duration (p = 0.05). Hematological disorders were more seen in ‘poor sleepers’ and musculoskeletal disorders had a significant worsening impact on PSQI total score (β = 0.28, p = 0.05). Our study showed that sleep quality in renal transplanted patients is surprisingly low, and demonstrates that poor sleep is associated with comorbidities, ESRD duration and some serum components. Future studies with more powerful and precise tools and larger sample sizes are necessary for confirming our results.

P-185
LEFT ATERIAL THROMBOSIS AFTER ORTHOTROPIC HEART TRANSPLANTATION: ETIOLOGY DIAGNOSIS, TREATMENT AND REPEAT A CASE

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Left atrial thrombosis in the absence of rheumatic heart disease and atrial fibrillation is rare. After orthotopic heart transplantation, despite of an uneventful post-operative course, sinus rhythm and normal contractility of the heart, large thrombi could be found several months following. Transplantation, because the enlarged atria may promote atrial thrombosis. Operative technique is proposed as one of the main factors that can contribute to left atrial thrombosis. TEE is the best method for detection of left atrial thrombosis. Usual treatment of thrombosis is surgical thrombectomy But we report medical treatment of large left atrial thrombus with 3 years uneventful follow up.
HEALTH RELATED QUALITY OF LIFE AND RETURN TO WORK AFTER CARDIAC TRANSPLANTATION: A SINGLE CENTER EXPERIENCE

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During the past years, Health-Related Quality of Life (HRQOL) has been taken into account in the analysis of heart transplant results, just like survival. The aim of this study was to assess HRQOL and the rate of return to work after cardiac transplantation. During scheduled follow-up visits, a total of 11 patients (9 male, mean age 35 ± 9.6, range 24-54) who underwent cardiac transplantation between May 2006 and August 2008 at Masih Daneshvari Hospital participated in the study. The functional status was assessed with New York Heart Association (NYHA) functional classification and HRQOL was measured with Medical Outcomes Study, 36-item Short Form Survey (SF-36) questionnaire. All eleven cases were classified at class III and IV of NYHA functional classification at the time of referral for transplantation and none of them could work. Three months after surgery, 10 and 1 of recipients reported much better and somewhat better health, respectively and all subjects were assessed to be in class II of NYHA functional classification. All patients went back to work following transplantation. The results of this small study showed that cardiac transplant recipients indicated an improvement in quality of life, general health and the rate of return to work. Some dimensions of health identified in this study may be areas for further investigation.

HEART TRANSPLANTATION IN IRAN; A SINGLE-CENTER REVIEW OF 15-YEAR PERFORMANCE

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Heart transplantation in Iran was first performed in July 1993. Since then, Shariati University Hospital has been representing the most active center of cardiac transplantation in Iran and one of the major sites in the Middle East. This is a comprehensive review of our 15-year practice registry to make a scheme of our record and achievements. Clinical data on all consecutive transplanted patients from department of cardiac surgery, Shariati University Hospital, Tehran, Iran over the last 15 years were reviewed. Descriptive and analytical statistics were extracted in regard of recipients, donors, surgical characteristics, and current status of patients on follow-up. Total number of 90 patients was transplanted since 1993; 11, 32, and 47 in three 5-year periods respectively. Mean age of recipients was 29.30 ± 13.17 years. Motor-vehicle accident was the main cause of brain death of donors (48.8%). The most common indication for surgery was idiopathic dilated cardiomyopathy (75.5%). Mean survival rate has been 6.66 ± 0.87 years. 1-year and 5-year survivals had a rising trend through the 5-year periods. Acute allograft rejection and infection were the two major events complicating our transplants. This study shows that despite a vast variety of obstacles we have passed the primitive milestones. The number of transplants is increasing at a higher rate in recent years, and patients’ survival rates and outcomes seem to be improving.
HEART OR KIDNEY TRANSPLANTATION, WHICH ONE?

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It is well known that CRD (Chronic Renal Disease) is responsible for many cardiac complications. The exact pathophysiology of heart disease in ESRD have not been understood but many theories have been assumed. After renal transplantation many of these complications improve. It is not known to what extent cardiac failure due to CRF is reversible. We report two cases with ESRD and severe heart failure with multi-valvular dysfunction, which were in the waiting list of heart transplantation. Both cases had LVEF below 20%. After medical management LVEFs were up to 30%. After successful kidney transplantation, both were asymptomatic and LVEFs rose to more than 50% after three months. Successful renal transplantation can significantly improve the cardiac function in ESRD, even with severe heart failure.

THE IMPORTANCE OF "CRRT" IN PREOPERATIVE AND POSTOPERATIVE MANAGEMENT OF HEART TRANSPLANT RECIPIENTS: REPORT OF TWO CASES

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Management of heart failure and renal failure in end-stage heart failure patients is a main problem. Utilization of IABP is very limited, because of potential risks for the patient, especially when no donor is available. Low blood pressure makes conventional hemodialysis impossible. Since 2006, 12 heart transplants were performed in our center. We have major problems in the management of 2 patients. Unfortunately VAD was not present in our center. CRRT was being utilized for them. In the first patient, 24 hours after heart transplant due to very low blood pressure for a long time before and after the transplant ATN with anuria was developed. The heart was still stunned and no VAD was present. CRRT started for the patient for 72 hours during which this period the blood pressure was raised, urination started and after 86 hours the creatinine declines. Another patient was a candidate of heart transplant with severe dyspnea, ascitis and pitting edema in lower extremities. No VAD was present and no donor was found. The patient was undergone CRRT twice each time for 48 hours and each time 12 Liters of fluid was evacuated, which after every procedure the patient became better. 30 hours after the last CRRT the patient was undergone heart transplant and had an uneventful post operative course. We concluded that CRRT can be used effectively not only for the management of renal failure, but also heart failure after and even before surgery and has many potential effects in removing the oxygen free radicals.
P-190
EARLY MORTALITY AND REASONS FOR EARLY MORTALITY AFTER CARDIAC TRANSPLANTATION

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Survival is increasing after cardiac transplantation due to either the selection of recipient and donor or improvements in surgical technique and immunosuppressive treatment. In this presentation we discuss the reasons for mortality in our cardiac transplantation patients. We performed 27 cardiac transplantations between 2003 and 2007. The mean donor and recipient ages were 24.8 ± 14 (4, 72); 31.1 ± 16 (4-61) years respectively. The mean ischemic and aortic cross clamp times were 222.15 ± 78.2 (108,359) and 85.65 ± 16.12 (62,139) minutes respectively. The 30 day mortality was 11.1% (3 patients). The reasons for early mortality were arrhythmia in one patient, systemic inflammatory response syndrome in another patient and cerebrovascular event in another on. The mean survival period of these patients was 8 (4-11) days. Survival rate in the first 30 days was 88.9%. Life expectancy in patients with end stage cardiac failure and waiting for cardiac transplantation is less than 40%. When considering literature and our experience, we believe that cardiac transplantation is a definitive treatment option in these patients.

P-191
FORMATION OF AN ORGAN PROCUREMENT UNIT FOR BRAIN DEATH

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Development of organ transplantation is linked with organ procurement. In many cases, such organs should be harvested from brain dead patients. Failing in such a task is the major cause of mortality in the waiting list of organ transplantation all over the world. In many cases, failing to acknowledge the existence of such patients and proper declaration to transplantation centers or other responsible authorities are the causes. To overcome this problem, organ procurement unit was developed in 2004 in Masih Daneshvari Hospital, Tehran, Iran. It is a university-based third-level hospital and a referral center for lung transplantation from all over the country. The unit covers some private and public hospitals in Tehran and some other cities. To unify the procedures, nursing coordinators of the covered hospitals participate in regular meetings and educational classes and then contacted daily about new cases of brain death. Representatives from organ procurement unit are contacted by hospital authorities about a case of brain death, the unit sends a trained and experienced representative to obtain electroencephalogram (EEG) and confirm the brain death. After that, if the patient’s family were willing to donate the organs, the patient is transferred with equipped ambulances to Masih Daneshvari Hospital. During this time the transplantation management center of the ministry of health is informed about the patient. The center coordinates and allocates organs between transplantation centers in the country. In our hospital, after admission to ICU, the final and legal approval of brain death by four different specialists from the ministry of health takes place and the family members of the patient sign the final consent for organ donation. After coordination with transplantation teams around the country, the harvest procedure takes place and the organs are sent to destination transplantation centers. The final step is to pay tribute to patient by attending the funeral by representatives from organ procurement unit. The described system assures quality care to brain dead patient along with proper and legal organ allocation. It could be used as a model for development of other organ procurement units in the region.
After deployment of National Transplant Database and Applications for United Kingdom (UKT) (GB, Scotland, Ireland, Wales) we are delivering the National Transplant Database and Applications for central Europe region (Slovak Republic). This solution covers the hospitals, transplant units, follow up centres, HLA labs, eye banks and external users in the field of solid organ transplantation process as well as for the first time covers the tissue and cell allocation, storage and procurement mechanism as a whole. It is a unique computerized web based transplant system that provides transplant centres, organ procurement organizations, histocompatibility laboratories and eye & tissue banks on a national level the ability to: - Manage their patient’s waiting list. - Access, complete and submit transplant data forms. - Add donor information and run donor-recipient matching lists. - Access various transplant data reports and policies. - Maintain an organ donor register - Interact with other national transplant systems online - Manage processes in Eye and Tissue banks - Manage all processes in tissue typing HLA laboratories - Compare individual national transplant practices between information systems and exports reports to the relevant international bodies. Also brings a new potential to international transplant service co-operation, unifies national transplant practices, enable equal access to transplantation between countries, help guarantee the safety of organs and the ethical standards by which they are retrieved and transplanted. This may represents a new approach with ability to connect multinational transplant services for sharing surplus organs into one virtual database as well as providing the complete national solution for an individual country. International registries can also benefit by providing data from a central point to many international studies.

Citation:
• The fastest Matching Run I have seen so far. Impressive performance. (Sue Falvey, Duty Office Manager, UK Transplant) • Chosen Web technology applications proved to be a visionary solution connecting external users to National Transplant Database from all over the UK and Republic of Ireland. Applications are extremely user friendly and remarkably stable. (Saifi Hashmi, Head of IT & Computing, UK Transplant) • Comprehensive validation of all records prior to their being committed to the database is in place and the applications are designed to ensure that the management has complete control over all aspects of the validation process. (David Shute, Director of Operations, UK Transplant) • Absolute accuracy of data stored in the database is of paramount importance to our work and the design of the applications ensures that this objective is achieved. (Andy Maxwell, Data Executive Manager, UK Transplant)
Today, organ transplantation from deceased donors increase. Isfahan society of transplantation is one of the main societies in the Middle East. From May 2000 to May 2008, 372 brain death were reported in Isfahan, 92 of them were harvested for their organs and the other did not fulfill donor criteria for transplantation or we did not have their relative consent forms. From 92 deceased donors, 165 kidneys were transplanted in Isfahan, in three cases enblock kidney transplant were performed. 8 kidneys sent to Shiraz because Isfahan nephrology group did not permit to transplant for 6 and we did not found any iso group recipient for 2. We could not use 8 harvested kidneys for transplant; 3 affected by prolong ischemic time, unilateral severe renal necrosis in one that we did not use the contralaterl kidney, two polycystic kidney disease and one donor was Hbs Ag+ we found only one Hbs Ag+ recipient. Although we did not use kidneys from these 8 donor, other organs like heart and liver were transplanted. In the last 8 years 165 kidneys, 12 hearts, one liver and one lung were transplanted in Isfahan. 8 kidney, 37 liver and 3 pancreases sent to Shiraz. One pancreas sent to Tehran. In conclusion, the main factors in organ transplantation from deceased donor are detection of brain death cases, good donor maintainance and
EVALUATION OF GRAFT FUNCTION AMONG RENAL TRANSPLANT RECIPIENTS MANAGED BY C2 AND C0 LEVELS MONITORING OF CYCLOSPORINE A DURING FIRST 6 MONTHS OF TRANSPLANTATION

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According to studies, there is correlation between cyclosporine blood level and function of transplanted kidney, so decrease in drug level may cause acute rejection in graft and its increase is accompanied with graft toxicity. Cyclosporine is regarded as a drug with narrow therapeutic index. It has different bioavailability and pharmacokinetic among people and in different times after transplantation. In this study, we compared the effect of different kinds of detection of drug level (trough versus peak level) on graft function. 106 patients received graft during the research period, 70 of them had criteria of entrance to study, but at the end of study, only 50 cases completed it. Trough (C0) and peak (C2) levels were monitored 7 times during the first 6 months after transplantation. After transplantation, C2 level was increased gradually, while until second week after transplantation, nobody had therapeutic C2 level, after that, only 25.7% of patients had therapeutic C2 level. There was not significant difference in laboratory data between two groups. Acute rejection in graft was observed in only 11 cases that none of them had therapeutic peak level. In conclusion, it was appeared that race may have effect in cyclosporine blood level may be by different metabolism and absorption of drug in Iranian people, so peak level may occur in different time (like 1.5 or 3 or 4 hours after taking the drug).

SUCCESSFUL RENAL TRANSPLANTATION AFTER ENDOVASCULAR STENT PLACEMENT OF TASC (TRANSATLANTIC INTER-SOCIETY CONSENSUS) TYPE B AORTOILIAC OCCLUSIVE DISEASE

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The occurrence of aortoiliac lesions with renal transplantation is an increasingly common combination that causes problems regarding operative strategy and indications for aortoiliac reconstruction and renal transplantation. Staged or simultaneous surgical repair of aortoiliac lesions with renal transplantation is possible at reasonable risk. Renal transplantation after repair of aortoiliac occlusive disease with traditional prosthetic vascular grafts has been shown to be effective. Interventional radiology continues to rapidly evolve, most notably with the advancement of PTA/stent placement of aortoiliac lesions. Trials continue to support the trend toward the use of endovascular aortic stent grafts in patients with TASC type A, B, C and D aortoiliac lesions. Literature data are still scarce regarding renal transplantation after endovascular stent placement of TASC type B aortoiliac lesions. Herein, we describe the first renal transplant in a patient with disabling claudication and TASC type B aortoiliac disease which treated with an endovascular aortoiliac stent graft (figure 1). ABI (ankle-brachial index) before and after the stent placement were 0.6 vs. 1.2 respectively. No intraoperative difficulties were encountered. At 1 year follow-up, the transplanted kidney is functioning well with a normal serum creatinine level of 1.2 mg/dl, and the patient has no worsening of peripheral vascular disease with ABI 1.28 (figure 2). We recommend that percutaneous intervention can be recommended for patients with TASC type B aortoiliac disease and the presence of an endovascular aortoiliac stent not be a contraindication to perform a renal transplantation.
P-198
UPPER GASTROINTESTINAL BLEEDING DURING THE FIRST MONTH AFTER RENAL TRANSPLANTATION, IN MYCOPHENOLATE MOFETILE ERA.

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Upper gastrointestinal bleeding remains a significant cause of mortality and morbidity among the renal transplant recipients. In this study we reported the incidence and risk factors of bleeding in the first month after transplantation. We retrospectively reviewed and analyzed the records of patients who received renal transplantation, in between January 2001-July 2007. We only included those patients with Mycophenolate Mofetile (MMF) in their immunosuppressant regimen. From a total number of 523 patients (F/M: 311/212, Age;7-58 ye), 27 patients (5.2 %) had upper gastrointestinal bleeding in the first month of transplantation. Among this 27 patients (M 13/F 14, age; 44 +/- 12) the most frequent endoscopic findings were; duodenal ulcer in 6 (22.2%), followed by erosive gastritis; 5 (18.5%) and bulbar erosion in 2 (7.4%). Gastric ulcer was seen only in one patient. Helicobacter pylori was positive in eight patients (30%). Acute rejection was recorded in 18 patients (67%). Active Cytomegalovirus infection (positive CMV IgM) was present in 7 of this 27 patient (25.9%). The percentage of above endoscopic findings in 88 (M 47/ F 41 age; 37 +/- 13 year) renal transplanted patients without GI bleeding (control group) were as the followings: duodenal ulcer in 2 (2.2%), erosive gastritis in 30 (33.7%), Bulbar erosion in 18 patients (20.2%). Helicobacter pylorus was positive in 44 (51.2%). Acute rejection had occurred in 16 (18%) and active Cytomegalovirus infection was present in 7 patient (25.9%). Acute rejection (P < 0.0001), pre-transplant duodenal ulcer (P = 0.0031), and active CMV infection (P = 0.0031) were strong risk factors for post-transplant upper gastrointestinal bleeding. We recommend that all renal transplant recipients with a recent history of duodenal ulcer, and in the circumstances of acute rejection and acute CMV infection should be closely monitored for a potential risk of gastrointestinal bleeding.

P-199
IS RENAL TRANSPLANTATION AN EXCEPTION? A STUDY OF GENDER IMPACT ON QUALITY OF LIFE IN DIFFERENT CHRONIC CONDITIONS

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The aim of the present study was to compare the gender impact on health related quality of life (HRQOL) among renal transplant patients and those suffering from different chronic diseases and also healthy subjects. In the present cross-sectional study, subjects with four chronic medical conditions entered our study: renal transplant subjects (n=156), coronary artery disease (CAD) patients (n=789), patients undergoing chronic hemodialysis (n=66), and rheumatoid patients(n=644). In addition to the four different groups of patients, another group of 168 healthy individuals was included in the study. The HRQOL was evaluated using SF-36. The mental and physical SF-36 scores of all the patients with chronic conditions had significant differences with one another and with those of the healthy subjects. The the SF-36 score was not significantly different between the male and female kidney transplant patients , however it was significantly different between the two genders in the CAD, chronic hemodialysis, rheumatoid, and normal subjects; whereas. We found that genders may percieve a similar quality of life in renal transplantation, which is not seen in other chronic conditions.
RENAL TRANSPLANTATION IN CHILDREN

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Previous studies of renal transplantation in children have focused on the survival of grafts and patients. Little information is available about the cause of renal disease or the sources of donated organs. The aim of this study was organized to identify the diseases that require transplantation and to analyze factors that affect the success of transplantation in children. We collected data from pediatric hemodialysis center from 1997 to 2007. These data included information about demographic characteristics of patients, graft function and rate of graft rejection. Totally 242 children with end stage renal diseases were managed at our hemodiaysis center, and 53 children received renal transplantation during this period. Sixty-two percent of the transplanted kidneys came from a living donor (82% unrelated donor, 18% related donor), and 38 percent from a cadaver. The major diagnosis which caused renal failure and leading to transplantation were reflux nephropathy (28%), neurogenic bladder (15%), glomerulonephritis (13%), nephrolithiasis (9%) and nephrotic syndrome (5%). The mean age at transplantation was 13.1±1.1 years (min age: 4 years, max age: 24 years). The rate of graft losses was 15% (living unrelated donor 3, living related donor 2 and cadaveric donor 3) and the mean time for graft failure was 6 months. During follow up, 2 patients died, and cancer developed in 2 patients. The most common causes of end-stage renal disease in children and adolescents in our center were reflux nephropathy and neurogenic bladder. The rates of graft survival were the same in patients who received a kidney from a living unrelated donor and those who received a kidney from a cadaver. Our study suggests that living related donor is superior to other options and must be encouraged whenever available.

RENAL RE-TRANSPLANTATION: IS IT JUSTIFIED?

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There is a dispute about the justification of renal re-transplantation in the presence of organ shortage, and the concept that patients who have lost a transplanted kidney are widely recognized as a high risk for re-transplantation. This is a retrospective study of the outcome of renal re-transplantation (Re-Tx) and to find out if renal re-transplantation is justified. Between 1993 and December 2007, 815 kidney transplantation procedures were performed in our centre, 55 of these (7%) were Re-Tx. The medical records of these patients were reviewed. They were 30 males and 25 females, aged 10 to 62 years (mean 36 years), and nine of them were children. Kidney grafts were obtained from 33 living and 32 cadaveric donors. Induction immunosuppression was with ATG in 32, Simulect in 9 and Thymoglobulin in 2 and one with Zinapax. Patients were followed up for 12 months to 156 months. Post transplantation complications were in the form of: 19 instances of surgical complication, 12 episodes of acute rejection, and 2 cases of malignancy. Three recipients died with functioning graft at 4 months to 62 months after transplantation. Nine more grafts were lost at one day to 84 months after transplantation secondary to renal vessel thrombosis in 4, chronic dysfunction in 2, and Primary non function in 1. Post renal biopsy bleeding in 1 and graft infarction secondary to antiphospholipid syndrome in one recipient. It was observed in the present series that renal Re-Tx is associated with recipient survival rates which are similar, and graft survival rates which are 10-13% lower than those in primary transplantation. These results are still quite reasonable to justify renal re-transplantation.
P-202
EVALUATION OF POLYNEUROPATHY MARKERS IN TYPE 1 DIABETIC PATIENTS AFTER KIDNEY TRANSPLANTATION:

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The purpose of this study was to evaluate whether kidney transplantation may stabilize polyneuropathy in uremic type 1 diabetic patients (end-stage renal disease [ESRD] and type 1 diabetes), who received a successful kidney transplantation (KT). Twenty five KT patients underwent electroneurographic tests of sural, peroneal, ulnar, and median nerves: the nerve conduction velocity (NCV) index and amplitudes of both sensory action potentials (SAPs) and compound motor action potentials (CMAPs) were analyzed longitudinally at 1, 2, and 3 years after kidney transplantation. Eleven patients with ESRD and type 1 diabetes who not received kidney transplantation served as control subjects. In both groups optimal glycemic control was obtained according to blood HgA1c level. The NCV score improved in the KT group up to the 1-year time point (P = 0.01 versus baseline) and stabilized 2 years later, whereas the same parameter did not change significantly in the control group throughout the follow-up period or when a cross-sectional analysis between groups was performed. Either SAP or CMAP amplitudes recovered in the KT group, whereas they continued worsening in control subjects. In conclusion, kidney transplantation seems to prevent long-term worsening of polyneuropathy in patients with ESRD and type 1 diabetes who receives kidney transplantation. No statistical differences between the two groups were evident on cross-sectional analysis.

P-203
TDM (THERAPEUTIC DRUG MONITORING) OF CYCLOSPORINE A IN IRANIAN CHILDREN WITH KIDNEY TRANSPLANTATION

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Cyclosporin A (CsA) is an immunosupresent with a narrow therapeutic window. Inter and Intra patient variability necessitates frequent blood level monitoring in transplant patients. The purpose of the present study was to evaluate CsA blood concentrations in order to find out the best time for sampling in Iranian children with kidney transplant. CsA levels were determined using a radioimmunoassay (RIA) in 29 (16 boys and 13 girls) pediatric transplant recipients with stable renal function. Mean age was 14.5 ± 2.3 years. The mean CsA dose was 4.7 ± 0.4 mg/kg/day. There was a high correlation between CsA dose, serum creatinine and C1.5 level. There was no correlation between C0 and above mentioned parameters. In conclusion, for using single point monitoring, C1.5 CsA levels seems more accurate than C0 in Iranian pediatric transplantation patients.
MYCOPHENOLATE MOFETIL DOES REDUCE AND THE RISK OF ACUTE REJECTION IN THE FIRST YEAR FOLLOWING RENAL TRANSPLANTATION

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Mycophenolate mofetil (MMF) significantly decreases acute and chronic rejection after renal transplantation when prescribed at 2 gr / day. However, circumstances arise in clinical transplantation where the dose must be lowered, either to avoid drug toxicity or patient intolerance. This study determined whether MMF dose reduction was associated with subsequent risk of acute rejection. Between January 2003 and November 2004 in this prospective study all of the KTP patients received 2 gr MMF daily (control group) in combination with cyclosporine and corticosteroids and in a subgroup patients who can not tolerate the drug or their body weight with less than 60kg the does of MMF decreased to 1.5gr daily (study group). Then clinical and paraclinical outcome were compared in two groups. The primary endpoint was the incidence rate of acute rejection (AR) during the first 12 months post transplant; secondary aims were to compare patient survival, graft function, drug side effects, and other adverse events at 12 months of follow-up. A total of 224 patients (1.5 gr MMF (study group, n =109) and 2 gr (control group, n= 115) were included in the study. mean age and weight of study group were (35.20 ± 10.70 years and 61 kg) and control group were (36.29 ± 13.4 years and 66 kg) respectively. At 12 months there were no significant differences between study and control groups in patients survival (100 vs. 100%), graft survival (95% vs. 96%), acute rejection (8% vs. 9%) or mean creatinine mg/dl (1.25 ± 0.5 vs. 1.30 ± 61) respectively. In conclusion, the incidence of acute rejection for transplant recipients who underwent MMF does reduction was not higher than those who received conventional therapy.

TRANSMISSION OF LIMITED ASPERGILLOMA FROM A SUBCLINICALLY INFECTED DONOR: REPORT OF 2 CASES

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Opportunistic fungal infections like Aspergillosis are life-threatening complications; they are a major cause of morbidity and mortality in organ transplant recipients. The infection risk from a deceased donor is directly related to the time the deceased donor spends in the intensive care unit. After transplant, a latent or subclinically present microorganism in the donor organ leads to symptoms in the recipient. We report 2 cases of renal aspergillum in recipients of a deceased-donor renal transplant. A 19-year-old patient and 29-year-old patient, both with end-stage renal disease, underwent a renal transplant from an 18-year-old deceased donor who had died of a subarachnoid hemorrhage. The donor’s length of the stay in the intensive care unit was 9 days. Neither patient had a complication postoperatively. Both patients were discharged with normal renal functions. Five months later, during control ultrasonography and computed tomography, we diagnosed solid and hypoechoic lesions in the renal graft. An ultrasound-guided renal graft biopsy was done. The histopathology examination revealed Aspergillosis fumigates. At diagnosis, the results of renal function tests were normal in both patients. Consecutive therapy with Varicanasole, caspofungin, and amphotericin B was used for 70 days. In addition, intralesional 50 mg amphotericin B was administrated 5 times in both patients. Despite these therapies, clinical and radiologic variables were poor. We decided to do a graft nephrectomy. Before nephrectomy, the patients’ mean serum creatinine levels were 1.7 and 2.9 mg/dL. After nephrectomy, antifungal therapy was continued for 1 week. Patients’ mean serum C-reactive protein values decreased to 10 and 25 mg/L. Both patients were discharged without surgical complications to a routine hemodialysis program. In conclusion; opportunistic fungal infections like Aspergillosis, viruses, and parasites are transported from subclinical infected donors to recipients of organ transplants. When deceased-donor organs are used, patients should be frequently tested for latent infections.
MOLECULAR STUDY OF THE POST-RENAL TRANSPLANT BK VIRUS REACTIVATION

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BK virus is a common human polyomavirus typically occurs in early childhood and cause subclinical primary infection. Use of immunosuppressive treatments may lead to reactivation of primary latent infection of BK virus. Nephropathy associated with the BK virus has become an important cause of allograft rejection post renal transplantation. In this research for determination of BK virus reactivation the prevalence of BK virus were evaluated pre and post renal transplantation. Seventy eight renal transplant patients including: 51 males (65.4%) and 27 females (34.6%) aged between 16-60 years (mean = 34.78) were studied. Blood (plasma) and urine samples were collected from renal recipients, pre-transplant and 1 month and 4 months post-renal transplant. The molecular prevalence of BK virus was analyzed by an in-house nested PCR protocol in these samples. The collected data were statistically analyzed with SPSS software. BK virus genome was detected in 5 of 78 (6.4%) urine samples pre-transplantation. But BK virus DNA was diagnosed in 10 of 78 (12.8%) and 30 of 78 (38.6%) urines samples in first and fourth months post-renal transplantation, respectively. All pre-transplant collected plasma specimens were negative for BK virus-PCR. But in the first and fourth months post-transplantation, positive results of BK virus-PCR was detected in 1 of 78 (1.3) and 16 of 78 (20.5%) of plasma samples, respectively. Positive results of BK virus-PCR differed significantly between first and fourth months post-renal transplantation. The results of this investigation showed that the prevalence of BK virus reactivation was increased, switching pre to post renal engraftment. Therefore monitoring of BK virus infection was recommended for better management of the surveillance of transplant patients.

THE RESULT OF PEDIATRIC KIDNEY TRANSPLANTATION IN AZATHIOPRINE AND MMF USERS

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Kidney transplantation is the preferred modality of treatment in children with end stage kidney disease. Azathioprine (AZA) is from the oldest group of immunosuppressive therapy but in recent transplant era it has been mostly replaced by Mycophenolate mofetil (MMF). In this longitudinal study the result of kidney transplantation in children on AZA and MMF is compared. Medical records of all children who had been transplanted in Shiraz from the beginning of transplantation program and who had pediatric nephrologist follow up, were gathered either during their last referral and when expired or returned to dialysis from their medical files. Mean serum creatinine of children who had been on MMF was compared with those who had been on cellcept. Their immunosuppressive regimens were otherwise similar. SPSS15.1 software and T-Test and Pearson correlation test were used for Statistical analysis. From the 216 children ≤ 19 years old at Tx between 1992 and 2007, 138 children was followed by pediatric nephrologist. There were 79(57.2%) boys and age at Tx was 3-19 years with a Mean+/-SD of (13.6 +/-3.5) and minimum weight of 10 kg. Donor ages were 1to52 years with a mean of (24.6 +/-12.5) with 41 parents, 9 siblings and other relatives, 67 deceased and 21 unrelated. Their Primary renal diseases consisted of glomerulardiseases, hereditary diseases, reflux-obstruction dysplasia, stone and unknown in 26(19%), 47(34%), 58(42%), 2(1.5%) and 5(3.5%) respectively. The mode of dialysis before transplantation was hemodialysis in the majority of our cases (85.5%), followed by preemptive transplantation (12.1%). Their immunosuppressive regimen included prednisolone, cyclosporine A and either AZA or MMF. Thirty seven allocated to AZA and 92 to MMF group. Nine children took neither azathioprine nor cellcept 7 due to primary non-functioning of graft. Regarding the result of Tx in MMF group or AZA group, after exclusion of 7 children with primary non-functioning of graft and 2 who didn’t take AZA or cellcept, 11 out of 92(12%) children in MMF group either expired or returned to dialysis but in AZA group 8 out of 37(21.5%) did so, 2 children in the later group died with normal renal function. Children in the AZA and MMF group had a follow up of 98.08 ± 38.72 and 60.64 ± 38.42 months respectively. The Mean of last serum creatinine was 2.36 ± 2.5 and 1.64 ± 1.66mg/dl respectively. From the children in AZA group 6 returned to dialysis after a mean period of 77.6 months and from the MMF group 6 returned to dialysis after a mean time of 20.16 months. In conclusion, by considering the longer follow up in AZA group the result of transplantation is more or less similar with AZA and MMF.
P-208
HYPERLIPIDEMIA IS AN INDEPENDENT RISK FACTOR FOR PEDIATRIC CHRONIC ALLOGRAFT NEPHROPATHY

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Chronic allograft nephropathy (CAN) is now the leading cause of renal transplant loss in pediatric transplant recipients. Despite improvements in immunosuppression, which have significantly reduced the incidence of acute rejection, the rates of chronic kidney loss have remained unchanged in pediatric transplant patients over the last 20 years. Hyperlipidemia is known a risk factor for cardiovascular disease and chronic allograft nephropathy in adult renal transplant recipients, whereas no data exist in pediatric transplant population. In this cross sectional study, 62 renal transplant recipients (32 CAN vs. 30 non-CAN) that aged 5-18 year(yr) and with the mean follow-up time of 48 month(mo) after transplantation, were evaluated for lipid profile and renal function tests. The incidence of hypertriglyceridemia and hypercholesterolemia after Tx in non-CAN group was 53.3% and 26.7%, respectively. On the other hand, the incidence of hypertriglyceridemia and hypercholesterolemia after Tx in CAN transplanted children was 68.8% and 59.4%, respectively and the result of McNemar test show that only hypercholesterolemia was significantly more occurred after Tx among CAN patients (59.4% vs. 26.3%, P = 0.021). Comparisons Between groups also showed that hypercholesterolemia and high LDL cholesterol were significantly more seen in CAN group (59.4% vs. 26.7%, P = 0.019; and, 57.1% vs. 22.2%, P = 0.039, respectively). Thus, hypercholesterolemia and high LDL cholesterol after Tx in CAN transplanted children was 68.8% and 59.4%, respectively and the result of McNemar test show that only hypercholesterolemia was significantly more occurred after Tx among CAN patients (59.4% vs. 26.3%, P = 0.021). Comparisons Between groups also showed that hypercholesterolemia and high LDL cholesterol were significantly more seen in CAN group (59.4% vs. 26.7%, P = 0.019; and, 57.1% vs. 22.2%, P = 0.039, respectively). Thus, hypercholesterolemia and high LDL cholesterol were indicated as significant risk factors for CAN [OR = 4.02 (95%CI, 1.37-11.76) and OR=4.67 (95%CI, 1.16-18.81), respectively]. Further analysis with Cochran’s statistics show that the effect of hypercholesterolemia on CAN is also independent of acute rejection (P=0.024), hypertension (P=0.011) and donor age (P=0.017). Our results showed that in pediatric recipients hyperlipidemia and particularly hypercholesterolemia have significant association with chronic allograft nephropathy and as adults may need specific therapy which could be more evaluated in later studies.

P-209
IMPACT OF CARDIOVASCULAR RISK FACTORS ON THE OUTCOME OF RENAL TRANSPLANTATION

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Cardiovascular diseases are more common in recipients of renal transplants and renal insufficiency has been shown to be a risk factor for cardiovascular disease. Reversely, some studies have reported that cardiovascular risk factors may interfere with the outcome of grafting. To determine the impact of cardiovascular risk factors on the outcome of renal transplantation in Iranian subjects. This is a retrospective, observational study including patients of 20-85 years of age who had undergone renal transplantation. Data collected included demographics, cardiovascular risk factors, past medical history, last measure of creatinine, cause of graft failure and death, date of transplantation, rejection, and death and the outcome of transplant. A total of 192 patients were analyzed including 152 cases and 40 controls. Frequencies for hypertension, hyperlipoproteinemia, diabetes mellitus, obesity, cigarette smoking, and family history of cardiovascular diseases are available in the full text. The mean serum creatinine in the case and control groups were 1.33 ± 0.13 and 1.29 ± 0.36 mg/dL respectively (p-value=0.493). Response to transplantation was categorized based on a report from the World Health Organization. Complete response to grafting occurred in the control group more than the case group (p-value=0.009) while frequency of partial response to grafting was higher in the case group (p-value=0.008). A history of chronic obstructive pulmonary diseases (COPD) could significantly predict the outcome of grafting (p-value = 0.008) as could the occurrence of renal failure (p-value = 0.022). Results were consistently reproduced using multivariate cumulative log it model. In conclusion, The measured cardiovascular risk factors are apparently not related to the outcome of the transplantation.
P-210
COMPARISON OF RENAL TRANSPLANTATION OUTCOME IN CHILDREN WITH AND WITHOUT BLADDER DYSFUNCTION

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We evaluated the outcome of graft in children with lower urinary tract dysfunction and compare it with children without these abnormalities. We reviewed 40 recipients younger than 18 year old who underwent 40 renal transplants. Cases divided in 3 groups. Group I, 20 children without lower urinary tract dysfunction and group II, 8 children with bladder dysfunction but adequate drainage and low intravesical pressure and group III, 12 children with lower urinary tract dysfunction with inadequate drainage and low compliance bladder and high Intravesical pressure. A total of 12 children in group III, underwent bladder augmentation before transplantation, including ureterocystoplasty in 3 cases, enterocystoplasty in 4 cases, autouaugmentation in 1 case, and for one case Mitrofanoff was performed. Kidney transplantation was performed in the classic manner by extra peritoneal access and the ureter was implanted by using extravesical anti reflux procedures. At a mean follow up of 20 months, 6 cases lost their grafts. A total of 5 major surgical complications occurred in 40 transplanted kidneys (12.5%) with a similar incidence in all groups. In groups I, II and III the overall graft survival at 1 year was 100%, 95%, and 87% respectively. The overall graft survival at 3 years was 85%, 75%, and 66.2% in group I, II, and III respectively. In conclusion, with appropriate treatment, children with severely disordered inferior urinary tract function may undergo renal transplantation with a safe and adequate out come.

P-211
PRE-TRANSPLANT SERUM VITAMIN D LEVELS AND RISK OF CANCER AFTER RENAL TRANSPLANTATION

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Serum levels of 25-OH-D3 inversely correlate with the incidence of various types of cancers in the general population. Since risk factors and incidence of cancer in renal transplant recipients (RTRs) are different from the general population, this study was designed to determine whether pre-transplant 25-OH-D3 levels could be predictive of cancer risk in RTRs. Pre-transplant 25-OH-D3 levels were reviewed in 363 consecutive RTRs. The impact of 25-OH-D3 levels on development of cancer was then analyzed with respect to other known risk factors. One hundred twenty four patients (34.2%) showed vitamin D deficiency, 185 (51%) vitamin D insufficiency, and 54 (14.8%) with normal vitamin D levels. Thirty two cancers (8.8%) occurred in 32 patients. A higher incidence of cancer was observed in patients with vitamin D deficiency (13.7 % vs. 7 % for patients with vitamin D insufficiency [p=0.068] and 3.7 % for those with normal vitamin D levels [p=0.007]). 25-OH-D3 levelswere lower in patients who developed cancer after transplantation (13.7 +/- 6 vs. 18.3 +/- 17.8 ng/ml; p=0.022). Age (HR, 1.06; 95% CI, 1.02 to 1.11, for each one year increase; p=0.009) and low 25-OH-D3 levels (HR, 1.12; 95% CI, 1.04 to 1.23, for every 1 ng/ml decrease; p=0.021) were independent risk factors for development of cancer. In conclusion, pre-transplant level of 25-OH-D3 is an important determinant for subsequent development of cancer after transplantation. Future studies should examine whether 25-OH-D3 supplementation can effectively decrease the incidence of cancer in RTRs.
REGRESSION OF POST TRANSPLANT TRANSITIONAL CELL CARCINOMA OF BLADDER: A CASE REPORT

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Kidney transplant is the best way of treating ESRD patient, but prolonged and heavy immunosuppressive therapies expose them for other complications one of which is malignancy. The incidence of some of cancers is high as much as 3-5 folds in transplant patients as compared to age matched general population. Transitional cell carcinoma of bladder is also encountered after kidney transplantation although it is not a common tumor after transplantation but reported to be high incidence in analgesic nephropathy and long standing ingestion of well water with high arsenic level. We are reporting a 56 years old Saudi male who had ESRD 15 years ago with the history of schistosomiasis. He had two unrelated kidney transplantations with the difference of ten years. He got hemodialysis in between the transplants. First graft was failed due to CAN after 2 years of transplant. He had second transplant then 2 years ago with the working graft. He has history of recurrent UTI, the evaluation of which reveals thickening of bladder wall along three perigraft masses. Cystoscopy and Biopsy shows highly malignant transitional cell carcinoma of bladder. He is under Cisplatin-based chemotherapy. His follow up MRI shows the regression of primary bladder tumors and the three perinephric masses.

POST TRANSPLANT DIABETES MELLITUS AND ITS RISK FACTORS

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Post transplant diabetes mellitus (PTDM) is a frequent complication of renal transplantation (Tx), reported in 9 to 36% of cases. This study was conducted to determine the prevalence and risk factors of PTMD in Iranian renal Tx recipients. In this cross-sectional study 300 renal Tx patients who regularly visited a referral Tx laboratory, were studied between March and August 2007. Questionnaires including clinical data were filled and blood samples were taken for biochemical studies. PTMD was defined as DM after renal Tx without a pre-Tx Hx. There were 184 (61.3%) male and 116 (38.7%) female patients with a mean age of 41.2 ± 13.5 years. The mean post-Tx interval was 67.4 ± 48.6 months. PTMD was seen in 24 patients (8%). The mean interval for development of PTMD was 19.9 ± 31.5 months. The mean age of patients with PTMD was significantly higher than those without PTMD (49.4 ± 13.4 yrs vs. 40.6 ± 13.4 yrs, p< 0.005). Mean serum HDL was higher in PTMD compared to non-PTMD patients (71.4 ± 21 vs. 58.6 ± 14.6, p<0.005) and there was a trend for higher serum LDL in PTMD patients (109.2 ± 29.5 vs. 96.2 ± 25.2, p=0.06). History of a recent admission was more frequent in PTMD patients (58.3% vs. 28.7%, p< 0.005) so was the history of HCV infection (6% vs. 1%, p< 0.01). There was no significant difference between the dose of prednisolone, cyclosporine, cellcept, azathioprine, and atenolol, mean body mass index, family history of DM, Tx rejection, history of CMV infection and frequency of positive anti-HCV antibody between 2 groups. Our study showed an 8% prevalence of PTMD. Mean age, history of admissions and HCV infection and mean plasma HDL and LDL levels were higher in PTMD patients. Our study didn’t prove any relationship between PTMD and the other reported risk factors. Prospective cohort studies are suggested.
P-214
COMPLETE RECOVERY OF RENAL ALLOGRAFT FUNCTION AFTER 72 DAYS OF DELAY FOLLOWING LIVING RELATED TRANSPLANTATION

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Delayed graft function (DGF), a term employed when a newly transplanted organ does not function efficiently is commonly observed following cadaveric renal transplantation but is very rare after living related transplants. We present a 28-year-old Lebanese female recipient of kidney from her 60 years old mother, who had DGF following transplantation due to acute tubular necrosis, probably caused by partial allograft arterial thrombosis, which recovered function after 72 days. She underwent a living related kidney transplantation after receiving induction therapy with Basilixmab. There was an initial delay in graft function during which period she was oliguric; the urinary output progressively reduced until she became anuric 3 days post transplantation requiring Hemodialysis. The patient underwent multiple ultrasound of the allograft, which revealed normal sized renal allograft with good cortico-medullary differentiation. Doppler scanning showed a good flow but a high resistance index was demonstrated. Renal allograft biopsy was carried out three times during the course of DGF 3, 18, 50 days post transplant, all revealing severe acute tubular necrosis without rejection. She started showing signs of renal recovery on the 68 day post-transplant when her urinary output progressively improved and her Creatinine level dropped down to 1.3 mg/dl on day 72.

P-215
IMMUNOGLOBULIN CLASS (IGG, IGM) DETERMINATION BY DITHIOTHREITOL IN SENSITIZED KIDNEY TRANSPLANT CANDIDATES

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Immunoglobulin class plays an important role in the histocompatibility crossmatch test to predict hyper acute rejection in kidney transplantation. The existing data indicates that immunoglobulin (Ig) M antibodies, particularly when they are autoantibodies, are not deleterious to the renal allograft. We used the reducing agent dithiotreitol (DTT) to inactivate IgM but not IgG in the crossmatch assay to help sensitized patients have the chance for successful transplantation. In this descriptive study, 57 candidates for kidney transplantation with final positive crossmatches who had a history of panel-reactive antibody (PRA) greater than 30% were selected. Two of 57 patients had systemic lupus erythematos (SLE). The sera of patients were treated by DTT and then measured for dependent cytotoxicity against donor lymphocytes and a panel of 12 cells using the complement dependent cytotoxicity (CDC) method. Autocrossmatch was also performed to differentiate autoantibodies and alloantibodies by the CDC method. Of the 57 patients, six subjects (10.53%) had IgM and 51 patients (89.47%) IgG in their serum against donor lymphocytes. Also against panel cells, 39 of 57 patients (68.43%) had IgG, three patients (5.26%) had IgM, and 15 patients (26.31%) had both IgG and IgM antibodies. Autolymphocytotoxic antibodies were detected in 1.75% patients (1 of 57) who had SLE. According to our results, 5.26% of the patients who were IgM-positive and IgG-negative for both crossmatch and PRA assays may experience successful kidney transplantation.
**P-216**

**SKULL MASS AS THE FIRST MANIFESTATION OF RECURRENT MULTIPLE MYELOMA IN A RENAL TRANSPLANT PATIENT**

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Recurrence of multiple myeloma (MM) Presenting as an isolated lesion in the brain has been reported very rarely, Although there have been a few reports of recurrence of MM in the transplanted kidney. Here we report a 60 year-old white lady who had a history of rise in BUN& creatinine about two years ago. Native kidney biopsy revealed "Advanced tubulointerstitial Nephritis" on microscopic examination, so she underwent kidney transplantation. Two years after Renal Transplantation the patient presented with a skull mass which was regarded to be a meningioma. On routine follow- up of the patient, a rise in BUN& creatinine was found. So she was scheduled for a biopsy of the transplanted kidney which revealed "Myeloma cast Nephropathy ". We describe an unusual presentation of Recurrent multiple myeloma mimicking meningioma and discuss the differential diagnosis of the patient’s primary disease.

**P-217**

**DOES RAMADAN FASTING NEGATIVELY IMPACT ON RENAL ALLOGRAFT FUNCTION?**


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Fasting during Ramadan is prescribed for every healthy Muslims after the age of puberty whereas the special people such as elderly, sick, children, and etc are among those exempt. However, some patients ask to know whether it is safe to fast if they decide to fast. The aim of this study was to evaluate the influence of Ramadan on kidney recipient volunteers. We conducted a prospective study on 41 adult kidney transplant recipients who chose to fast during Ramadan and 48 recipients who had not fasted at three university transplant centers in the month of Ramadan (September– October 2007). Volunteers were allowed to eat freely from iftar to sahar (dusk to dawn), the average duration of fasting was 14 hours a day. The two groups were matched for age, gender, body mass index (BMI), source of donor (living or cadaver), immunosuppressive regimen, and time since transplantation. All 82 recipients underwent transplantation at least 1 year prior to the study and all had stable renal function for at least 6 months prior to the study with creatinine clearance values higher 60 ml/min. The exclusion criteria were history of acute tubular necrosis due to dehydration; patients who were below 18 years of age; uncontrolled or poorly controlled hypertension or diabetes mellitus; Pregnant patients; concurrent disorders such as chronic liver disease, advanced cardiac disease, acute infection, or diabetes insipidus, active peptic ulcer, or nephrolithiasis; no need for medications more than twice a day; and polyuria (urine volume: 2.5 L/d). For each patient, we recorded body weight, BMI, blood pressure, as well as urinalysis, and serum levels of blood urea nitrogen, creatinine, uric acid, blood glucose, electrolytes, lipids, and hemoglobin. All parameters were assessed before, during, and after the month of fasting. The mean ages of the fasting and control groups were 42 ± 12 years and 43 ± 12 years, respectively, and the corresponding times since transplantation were 10-210 (average: 65) months and 11-180 (average: 69) months. Our results showed that GFR did not significantly changes during Ramadan for either group (mean calculated GFR in pre and post Ramadan were 72.8 ± 27.8 and 73.1 ± 29.3 in faster group, P< 0.05; and 73.4 ± 18.8 and 73.1 ± 18.5 in non-fasters, P< 0.05). No statistically significant difference in other parameters was noted between these two groups. The results did not show any adverse effects of fasting, especially on allograft function, in kidney recipients who have stable renal function prior to fasting.
P-218
HOCKEY-STICK OR PELVIC GIBSON INCISION: WHICH IS PREFERRED FOR TRANSPLANT IN KIDNEY RECIPIENT?

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Kidney transplant is the preferred treatment option for chronic renal failure; a disease in which the incidence is increasing every year. Graft survival and patient survival has been improved in comparison with before. This improving partly dependent to technique and partly to advance in immunosuppressive drugs. Incision is important in multiple standpoints including: cosmetic, pain, complication. Herein we compare two techniques of incision (Oblique and ) with each other. 60 kidney recipients in two groups (every group 30 patients selected as consequence of admission). in group one of kidney recipients the traditional incision hockey stick incision and in group two pelvic Gibson incision were carried out. Post operation pain of patient and cosmetic appearance and bulging of abdomen (relaxation of abdomen ) and hernia in one year post operation were considered. In group one there was one case with hernia and cosmetic appearance was not good and there was three case with widening scar, in group two cosmetic appearance was good and there wasn’t hernia also pain was less than in group one. In conclusion, the outcome of oblique incision is better than hockey stick in cosmetic appearance and pain and hernia relaxation of abdomen.

P-219
KIDNEY TRANSPLANTATION FROM LIVING RELATIVES DURING LAST 3 YEARS IN AZERBAIJAN, UROLOGICAL CENTER, BAKU, AZERBAIJAN

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There are more than 3000 patients in our Republic with chronic kidney insufficiency (CKI) of different stages, and 1200 out of them are of terminal stage. 650 of them get programmed haemodialysis, another 500 patients are partly dependent to technique and partly to advance in immunosuppressive drugs. Incision is important in multiple standpoints including: cosmetic, pain, complication. Herein we compare two techniques of incision (Oblique and ) with each other. 60 kidney recipients in two groups (every group 30 patients selected as consequence of admission). in group one of kidney recipients the traditional incision hockey stick incision and in group two pelvic Gibson incision were carried out. Post operation pain of patient and cosmetic appearance and bulging of abdomen (relaxation of abdomen ) and hernia in one year post operation were considered. In group one there was one case with hernia and cosmetic appearance was not good and there was three case with widening scar, in group two cosmetic appearance was good and there wasn’t hernia also pain was less than in group one. In conclusion, the outcome of oblique incision is better than hockey stick in cosmetic appearance and pain and hernia relaxation of abdomen.

Patient received 576 haemodialysis, and 1 patient never had taken haemodialysis. In 17 cases was transplanted left kidney of the donor into the right ileac region of the patient, in 2 cases right donor’s kidney was transplanted into the same side of the patient. One female was performed nephrectomy of the right kidney because of polycystosis and large size of this kidney (340x230x170mm), and then the kidney from donor was transplanted into the right ileac. In all these cases the heating ischemia lasted no longer than 2 min, and cooling ischemia - 40-50 min. Cooling perfusion was performed in cuvet with sterile ice and 500,0 Ringer lactate solution, +18°C. In 17 cases were performed vasal anastomoses between a.ileaca interior and a.renalis, between vena ileaca externa and vena renalis. In two cases there was severe atherosclerosis and after atherectomy there were performed arterial anastomoses between a.renalis and a.ileaca externa. After setting on the haemocirculation all the transplanted kidneys restored the function of urine excretion. In 17 cases the ureterocystoneostomy was performed by Barry method, and in 2 cases – by Barry-Takoshi method. During first 24 hours after, transplantation the diuresis varied between 14-36 liters. During first 3 days all the patients were injected 500 mg of methylprednisolone, and every next 2 days the dose was being reduced as follows: 250mg - 150mg -100mg and then prednisolone administration was in tabs 50mg/day. Supportive dose of prednisolone usually was 10 mg/day. Cyclosporine (Sundymmoon-Neoral) was prescribed as 8 mg/kg and then every 5 days the dose was being reduced for 1 mg/kg. Supportive dose of Cyclosporine was 150-250 mg a day. Azathioprine was prescribed as 1, 5-2 mg/kg and during next period was administered 50-75 mg/day. This drug is prescribed to 10 patients. Cellecept was given in dose of 2000 mg/day (twice 1000 mg). This drug receives 9 patients. In cases on the second day after operation was bleeding and the wound was tamponade, the patient urgently was revised and bleeding was stopped. In 3 cases after one week began the crisis of rejection. There was prescribed puls therapy by means of methylprednisolone. In two cases the crisis was stopped, and only in one case the expected effect was not succeeded. In this case the haemodialysis was applied during one month. On the background of crisis the level of creatinin has reached 1100 mkmol/l. During two weeks was applied antilymphocitary immunoglobulin and as a result the crisis was discontinued.

The level of creatinine reduced till 186 mkmol/l. In this patient a month later was diagnosed paraneaphric abscess on the dorsolateral surface. The abscess was drained by means of surgical intervention. In two cases – 3 months after and 6 months after transplantation there were found few concernments in the transplant. Complex therapy was applied and the concernments were eliminated. Normalization of creatinine level was succeeded during 6 days (140 mkmol/l and less). One month later after transplantation the level of plasma creatinine was 100.4±19.4 mkmol/l. Duration of hospitalization of the recipients was 14-20 days, and of the donors – 2 days. There was not ureter stenosis or and fistula formation. The condition of patients was satisfactory. All the patients receive the immunosupressor drugs free of charge during life in accordance with state law.
URETER REPLACEMENT WITH NEW XENOGENIC OVINE FOETAL URACHUS DUCT IN DOGS

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The ureter as an important part of the urinary system that can be affected by several disorders such as congenital malformations, extensive iatrogenic ureteral obstruction, ureteritis, retroperitoneal fibrosis, trauma, necrosis, calculi, tumors, etc. We wished to determine whether ovine foetal urachus duct will be accepted when used as a ureteral replacement material in other species. The ureters of five adult native dogs were approached through a ventral midline laparotomy incision. A segment of 2-cm midureter was resected unilaterally. The left ureteral segments were replaced ovine foetal urachus duct using 5-0 PDS interrupted sutures. Internal ureteral catheter was left for 6 weeks. The patency of the ureters was assessed by intravenous pyelography (IVP) at 2 and 6 weeks, while inflammation and regeneration were assessed grossly and histologically. All five urachus transplantation were accepted successfully in radiological, macroscopical and histological evaluation. The ovine foetal urachus seems to be an embryonic tissue of extremely low antigenicity and therefore suitable for transplantation.

THE PREVALENCE OF H. PYLORI INFECTION IN PEDIATRIC CANDIDATES FOR RENAL TRANSPLANTATION

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Chronic renal failure was suggested as a protective factor against Helicobacter pylori infection in adults. Therefore, this study was designed to ascertain the prevalence of H. Pylori infection, histopathology and endoscopic finding among children with chronic renal failure. This was a retrospective descriptive / analytic cross – sectional study conducted from 1997 to 2005 in Ali asghar children hospital. 32 children (14 male, 18 female) aged 1-16 years with chronic renal failure (GFR< 70 ml/min), who were candidates for renal transplantation, underwent routine upper endoscopy. 107 children (54 male , 53 female) with normal renal function (GFR >90 ml/min) in whom endoscopy were done due to abdominal pain , FTT , GI bleeding , malabsorption , or nausea and vomiting were assigned as control. Sample selection method was convenient for cases and simple random from file numbers for control group. Two specimens of biopsy were taken from stomach and duodenum, H pylori was detected on histopathology by Geimssa staining. The outcome was H. pylori positive, gastritis in pathology and erythema, erosion or ulcer on endoscopy. Chi square and Table 2x2 was used to estimate the prevalence and Odd ratio. P <0.05 was considered significant. Control group was twice more symptomatic than case group; however, this difference was not significant. Nausea and vomiting in controls were 4.7%, in cases they were 15.6%; abdominal pain in controls were 31.8 % , in cases were 6.3% ( P= 0.003) ; gastrointestinal bleeding in controls were 8.2% and in cases were 6.3% . Prevalence of H pylori was lower in patients with CRF but it was not significant. Children with CRF were five times as likely to develop duodenitis diagnosed by pathology compare to control group. (P= 0.002) 19 out of 32 children with CRF were 4 years (+/- 2) in average on hemodialysis the prevalence of H pylori , endoscopic and pathologic findings were similar in those on dialysis and CRF children. Conclusion: Although the prevalence of H pylori in children with CRF was lower; the rate of duodenitis accompanied with gastritis was significantly higher in this group.
**P-222**

**VITAMIN D STATUS, BONE MINERAL DENSITY AND INFLAMMATION IN KIDNEY TRANSPLANTATION PATIENTS**

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Vitamin D has immunomodulatory and antiinflammatory activity in healthy population and in various disease states. There is no data on the quantification of vitamin D status and inflammation and changes in bone mineral density in renal transplantation patients. The influence of vitamin D levels on allograft function and inflammatory status at the time of enrollment and one year follow-up were analyzed.

Sixty four renal transplant patients [38 male age: 38.61 ± 1.05 y, a median graft age of 6.15 ± 3.17 years] were included. Patients who had diabetes mellitus, known to have any chronic inflammatory disease and those with chronic allograft nephropathy were excluded. We obtained pre and post transplantation serum samples and urinary spot protein in each patient. Measurements of bone mineral density were performed by dual-energy X-ray absorptiometry.

After enrollment we followed the patients for one year. At the end of the year we assessed serum creatinine, CRP, albumin and spot urinary protein levels. The patients are divided into two groups by vitamin D levels (Group I: <20 µg/L, Group II: >=20 µg/L). There were no significant difference in iPTH levels of two groups. Vitamin D level was positively correlated with serum creatinine and (r=0.32, p=0.01), serum albumin levels (r=0.28, p=0.023) at the time of enrollment. In the first year follow-up the patients in Group I had significantly higher creatinine (p<0.001) and proteinuria levels (p<0.05) than those in group II. The major risk factor for osteoporosis was found to be high creatinine levels.

Low vitamin D levels are not uncommon in renal transplant recipients. There is a significant association of vitamin D level with renal allograft function and low vitamin D level can be a predictor for worsening of graft function and increasing proteinuria.

**P-223**

**RELATIONSHIP OF RENAL RESISTIVE INDEX WITH CARDIOVASCULAR DISEASE IN RENAL TRANSPLANT RECIPIENTS**

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Renal transplantation is the treatment of choice for end-stage renal disease in regard to morbidity, mortality and quality of life. Following transplantation, cardiovascular disease is the main cause of mortality and an increased renal allograft resistive index (RI) is associated with patient survival. We suggest to examine the predictive value of intrarenal RI on presence of atherosclerotic diseases.

Between 1999-2001 years, 97 patients who underwent renal transplantation and with stable renal function were included in the study. The patients who had renal artery stenosis, evidence of urinary tract obstruction, clinical signs of acute rejection and chronic allograft nephropathy were excluded. The clinical and laboratory parameters were obtained on each patient from the hospital records: demographic features, medications, serum creatinine, lipid parameters, body mass index (BMI), systolic and diastolic blood pressure, pulse pressure (PP), mean arterial pressure (MAP). At the time of study, intrarenal RI and carotid intima-media thickness (CIMT) were measured by Doppler ultrasonography. Estimated glomerular filtration rate was calculated according to the simplified version of the Modification of Diet in Renal Disease (MDRD). In linear regression analysis, RI was significantly correlated with recipient age (Beta=0.321, p=0.001), C-reactive protein (Beta=0.260, p=0.010), systolic blood pressure (Beta=0.380, p=0.00), PP (Beta=0.567, p=0.00), BMI (Beta=0.220, p=0.035) and CIMT (Beta=0.264, p=0.009). Multivariate linear regression analysis demonstrated that only PP (Beta=0.518; p=0.00) was independent predictive value for intrarenal RI. Intrarenal RIs are associated with traditional cardiovascular risk factors such as age, increased PP and systolic pressure. In patients with stable renal function, renal RIs have been associated carotid atherosclerosis assessed as CIMT. We found that increased intrarenal graft RI may predict presence of cardiovascular disease in noncompliant renal transplant recipients.
P-224
THE INFLUENCE OF RENAL GRAFT FUNCTION ON MYCOPHENOLIC ACID PHARMACOKINETIC DURING EARLY PERIOD FOLLOWING KIDNEY TRANSPLANTATION

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Mycophenolate mofetil, prodrug of mycophenolic acid (MPA), is widely used for maintenance immunosuppressive therapy in renal transplant recipients. The effect of renal graft function on MPA pharmacokinetic parameters is still controversial. The aim of this study is to investigate the impact of renal graft function on MPA pharmacokinetic during early post transplant period. Our study performed on 13 patients with severe renal impairment GFR<30ml/min, group I), and 13 patients with normal graft function (GFR >70 ml/min, group II), at steady MPA plasma level, during first month post transplant period. All patients received fix dose of MMF (1 g twice daily) in combination with Cyclosporine and steroids. MPA plasma levels were determined by validated HPLC method. MPA Area under the time-concentration curve from 0 to 12h AUC (0–12h) and apparent MPA plasma clearance (CL/f) were measured for each patient. MPA AUC (0–12h), MPA AUC (6-10h), first peak concentration (Cmax1) and secondary peak concentration (Cmax2) were higher in group I, while CL/f was higher in group II (P<0.05). Trough level (C0) was similar for both groups. (P>0.05). There was a negative correlation between GFR and AUC (r=-0.422, P=0.04), while there was a positive correlation between GFR and (CL/f) (r=0.463, P=0.02). Conclusion: Our results demonstrate that MPA pharmacokinetic parameters in normal renal function patients and severe renal impairment patients are different and renal graft function correlates with total MPA AUC and apparent MPA plasma clearance, however, necessity of dose adjustment base on renal graft function need further studies.

P-225
SYMPTOMATIC LYMPHOCELE AFTER RENAL TRANSPLANTATION; IN RECIPIENTS OF CADAVERIC AND LIVING DONOR GRAFT: A SINGLE CENTER EXPERIENCE

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Lymphocele is a fluid collection between renal graft and bladder. It is an uncommon complication (0.6% to 18%) following renal transplantation. Most of the patients are asymptomatic and spontaneous resolution takes place after a few months. We evaluated retrospectively the incidence, clinical presentation and management of lymphocele in recipients after renal allograft transplantation in recipients of cadaveric and living donor graft. Between Feb 1989 and May 2008, 1513 (905 male and 608 female) received renal allograft from living (1216) and cadaveric (297) donors. Diagnosis of lymphocele was established by ultrasound examination mainly in symptomatic patients. There were 28 cases of symptomatic lymphocele (18 females and 11 males), 11 cases (3.7%) in recipients of grafts from cadaveric donors and 19 cases (1.56%) in recipients of grafts from living donors. This difference is statistically significant (P=0.002). Lymphocele presented with rising serum creatinine (median: 2, 13 patients, 64.43%), pain and pelvic-abdominal swelling (6 patients, 21.42%), and lower extremities edema (9 patients, 32.15%). The average volume of lymphocele 133 ml. Percutaneous drainage was primarily performed in 5 patients but reaccumulation occurred in 4 of them that were managed with surgical approach. In 23 cases, the initial approach was surgical intraperitoneal drainage; All the cases were resolved successfully without graft loss. In conclusion, symptomatic lymphocele is a rare complication after kidney transplantation. In our assessment the incidence of symptomatic lymphocele is more in recipients graft from cadaveric donors camper to living donors. If it isn’t treated, ureteral compression and rise of serum creatinine may be resulted. Surgical intraperitoneal drainage is the most effective approach for the management of symptomatic lymphocele.
KAPOSI’S SARCOMA AFTER KIDNEY TRANSPLANTATION: A MULTI-CENTER STUDY


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Kaposi’s sarcoma (KS) is a relatively common malignancy after kidney transplantation. We conducted a retrospective analysis to identify all cases of Kaposi’s sarcoma complicating kidney transplantation in 8715 recipients at the 6 transplant centers (Baqiyatallah, Labbafi-Nejad, Urmia, Chamran, Milad and Yaser hospitals) between 1984 and 2008. Kaposi’s sarcoma developed in 47 (0.5%) recipients; one patient had lymphoproliferative disorder and another with renal cell carcinoma as well. The variables studied were patient age, gender, type of transplant, immunosuppression, simultaneous neoplastic or infectious problems, treatment received, progression of KS in individual patients, renal allograft function, and rejection episodes, the clinical presentation of Kaposi’s sarcoma, follow-up and outcome. The affected patients were 27 males and 20 females. There was no relationship between developing of Kaposi’s sarcoma and gender. The mean age of the patients at the time of diagnosing KS was 49 (range from 21 to 71) years. KS was more occurred in older age at transplantation when compared to patients without KS (P = 0.000). The time interval between transplantation and diagnosis of KS ranged between 2 and 143 months with a mean period of 29 months. Skin involvement was universal; mucocutaneous lesions occurred in 40 patients (85%) and visceral disease was noted in 7 patients. Therapy for Kaposi’s sarcoma consisted of immunosuppression withdrawal (n = 18), decrease in immunosuppression (n = 27), changing to sirolimus (n=2), chemotherapy (n = 6), radiotherapy (n = 2), conventional surgical excision of the lesions (n = 1), and 6 patient died before receiving complete treatment. Renal function was preserved when immunosuppression was reduced instead of withdrawn (P=0.009). The overall mortality in this series of patients was 19% (9 of 47 patients) and it was higher in patients with visceral involvement compared to those had mucocutaneous lesions (P=0.02). In conclusion, our study shows that simple reduction or cessation of immunosuppression may result in partial or complete remission of the disease.

CADAVERIC ORGAN DONATION; A REPORT FROM IRAN

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The majority of transplantation activities are solely dependent on cadaveric organs. In recent years, special attention has been paid to brain dead patients in Iran but it is not clear if such attention has helped in increasing cadaveric organ donation or not. Our data come from Organ Procurement Unit of Shaheed Beheshti University of Medical Science. It is the biggest and most active organ procurement unit from brain dead patients in Iran. All data regarding organ donation from brain dead patients from 2004 was evaluated for analysis. We describe demographic characteristics of the patients along with data regarding brain death and organ donation. In the specified period 93 brain dead patients were registered in database. The mean age of the patients was 31.7 ± 15.5 (range: 4 to 76) years and 64.5% of the patients were female. The cause of death was trauma (57%), vascular aneurysm (19.4%), drug toxicity (7.5%), tumors (5.4%) and other causes (10.7%). 84.6% of the patients successfully donated their organ(s), 14.3% expired eventually before donation and 1.1% had no suitable organ. Harvest rate of different organs were as follows: kidneys (73.1%), liver (66.7%), heart (41.9%), cornea (11.8%), pancreas (5.4%), lung (4.3%) and bone (2.2%). We observed an overall satisfactory harvest rate from brain dead patients; however, we believe that it should be improved. Kidneys and liver were the most frequently harvested organs while lung and bone were the least frequent ones and should receive more attention.
**P-228**

**DOES THE TIME REQUIRED FOR TAKING ORGAN PROCUREMENT PERMISSION HAVE A NEGATIVE EFFECT ON THE NUMBER OF DONATED ORGANS?**

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Taking permission for organ harvest from brain dead patient’s relatives can take a considerable amount of time. In these situations the harvest and transplantation teams are usually worried about the negative effects of such lengthened process on organ donation. In a retrospective design, we used organ donation records from Organ Procurement Unit of Shaheed Beheshti University of Medical Sciences since January 2005 to July 2008. We studies to see if the time between brain death announcements to organ procurement procedure has an effect on the number of harvested organs. For statistical analysis we used Pearson correlation coefficient. During the specified period 93 brain dead patients were registered in database. The mean time between brain death announcement and the harvest surgery was 1.6 ± 1 day. The mean number of donated organs was 3.1 ± 1.6 organs. The required time for taking procurement permission has no negative effect on the number of donated organs (R= 0.381, p<0.001). Organ procurement from brain dead patients needs family consent in Iran and many other countries. Most of the time family members cannot decide at the moment. Reasons like waiting for a spontaneous cure, waiting for a miracle or waiting for the whole family members to gather and give the agreement are among the causes of prolonged donation consent. While it is better to procure the organs as soon as possible, due to instability of the patients’ condition, our study showed that spending some times to take procurement contest won’t harm organ donation process.

**P-229**

**CADAVERIC ORGAN DONATION ACTIVITIES IN GAZI UNIVERSITY TRANSPLANTATION CENTER, ANKARA TURKEY**

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Cadaveric organ transplantation is one of the preferred ways of treating patients with end-stage organ failure. Gazi University, Medical faculty, Transplantation Center, Ankara was established on 1996. Since 1996, total number of brain death patients was 22. After January 2006 transplantation division was re-established. Between 1996 to January 2006 there were 6 brain-death patients and 3 family consents. After January 2006 the number of brain-dead patient was increased to 36 and the number of family consent was 16. For all brain-death cases, the rate of consent for donation was 45%. Totally 61 total solid organs (hearts, livers and kidneys) collected in this study period, 80% were transplanted at this center and 20% were offered to the National Coordinating System. Newly developed Gazi University Transplantation division has implemented continuous in-service training programs to improve all health services provided. Also, continuing medical education programs are being instituted in organ procurement and transplantation centers. These training programs enhance staff members understanding of and participation in procedures related to transplantation and improves the total quality of the transplantation process. Thus, brain death patients and family consents increased 300% in only one year. In conclusion, the transplantation process in Turkey is still severely handicapped by organ shortage. The gap between the number of organs available and the number of patients waiting for transplantation continues to expand at an alarming rate. The goal for the future is to create more effective protocols that will increase the consent rate and therefore allow better donor maintenance and higher rates of tissue/organ procurement and use with regard to the transplant coordination activities. Our newly enhanced transplantation activities will hopefully lead to a larger organ pool and shorter waiting lists.
RESULTS OF BILE DUCT RECONSTRUCTION WITHOUT STENT FOR LIVER TRANSPLANT

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Biliary complications are some of the most significant problems in liver transplant. Although T tubes and stents are widely used for routine biliary reconstruction during liver transplant, they have inherent complications, and there is no proof that they are beneficial to healing. In this report, we describe our results of biliary reconstruction without stenting in deceased and living-donor liver transplant recipients. Between January 2001 and July 2008, 238 liver transplants were done at our center. Before December 2006, we used different drainage techniques for biliary reconstruction including T tubes, straight feeding tubes, and transhepatic catheters. Since December 2006, we have done biliary reconstructions without a drainage catheter for both deceased and living-donor liver transplant recipients. After December 2006, 97 liver transplants were done for 94 recipients (62 male, 32 female patients; median age, 25.2±20.7 years; range, 0.5-60 years) whose cases were reviewed retrospectively. Forty-one of these 94 recipients were children, 16 of them were under the age of 1 year at the time of liver transplant. Biliary reconstruction was done with a duct-to-duct anastomosis in 74 recipients and with a Roux-en-Y hepaticojejunostomy in 23. Seventy of the 97 grafts had single bile duct, 22 grafts had 2 bile ducts, 4 grafts had 3 bile ducts, and 1 graft had 4 bile ducts. During a mean follow-up of 8.74.7 months (range, 1-17 months), our overall biliary complication rate was 13.4% (n=13). Bile leak occurred in 5 recipients (5.1%), biliary stenosis in 7 recipients (7.2%), and concomitant bile leak and stenosis in 1 recipient (1.1%). All biliary complications were treated using interventional radiology techniques. At the time of this writing, 12 recipients had died, and the remaining 85 recipients (87.2%) were alive. In conclusion; biliary reconstruction without using a stent is safe for both deceased and living-donor liver transplants, even for the pediatric recipients.

ORGAN DONATION WORKSHOP- A SURVEY OF NURSES’ KNOWLEDGE AND ATTITUDES TOWARD ORGAN AND TISSUE DONATION

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Despite the increasing number of transplantation in Iran, organ shortage and long waiting list are major problems in the country. Many publications demonstrated that the healthcare professionals’ willingness to participate in donation process can improve donation rate. Among the health care staff, nurses are usually the first people who recognize the patient as a potential donor. So they can have an important role in procurement of organs and tissues from deceased donors. Our objectives were a survey of nurses’ knowledge and attitudes toward Organ and Tissue Donation and examining the effect of an “organ donation workshop” on the nurses. A 39-item questionnaire was completed by 66 nurses, before and after participation in a 1-day “organ donation workshop” that was held at Iranian Tissue Bank (Tehran-Iran). The questionnaire contained demographic data, 29 questions regarding knowledge and 8 questions for attitudes toward organ and tissue donation. 69.7% of participants were women and 30.3% were men. The mean score for knowledge was 16.89 (SD= 3.33) before and 23.76 (SD= 1.66) after workshop (P=0.0001). The mean attitudes score was 4.76 (SD=1.71) before and 5.08 (SD=1.34) after workshop (P=0.235). Although 69.7% claimed they were willing to have a donation card, but only 19% of them actually carried it. This study showed that educational programs should enhance nurses’ knowledge and commitment to organ donation process and finally increase the donation rate. So, this is of great importance that organ procurement units focus on regular training programs for all healthcare staff.
KNOWLEDGE AND ATTITUDE OF DONOR CARDHOLDERS TOWARD ORGAN AND TISSUE DONATION IN IRANIAN TISSUE BANK: A CASE-CONTROL STUDY

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Many factors influence the donation rate such as; social factors, religion, familial relations and level of knowledge and attitude. Level of knowledge and attitude toward tissue and organ donation and transplantation plays important role in willingness to donation after death. Increasing the public awareness can reform the incorrect believes and myths to donation and transplantation. This study investigated knowledge and attitude of donor cardholders in relation to organ and tissue donation and transplantation. This case-control study was done in 2006 in Iranian Tissue Bank. 178 donor card holders and the same number of control group completed a questionnaire including 23 questions about different aspects of donation after death and demographic information. Knowledge and attitude toward donation and transplantation in cardholders was significantly higher than control group (P value< 0.05). There was a reverse correlation between the age and positive attitude toward donation and transplantation in cardholders. This investigation suggested that the main reasons for refusal to donate tissue and organ were insufficient knowledge and negative attitude due to misinformation regarding the donation and transplantation. We believe that educating and motivating the public with mass media can increase the rate of consent for tissue and organ donation and transplantation.

PULMONARY ARTERY STENOSIS SHORTLY AFTER LUNG TRANSPLANTATION: SUCCESSFUL BALLOON DILATION AND STENT INSERTION THERAPY IN ONE CASE

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Pulmonary artery stenosis after lung transplantation is a rare complication. It usually requires surgical correction but even after that the outcome is not favorable. The patient was a 53-years-old woman who was candidate for lung transplantation surgery due to pulmonary fibrosis. After 7 months on waiting list, with severe limitations in daily living activities, she received a single lung transplant in 2007. The surgery was performed without any complication. One day after surgery, blood oxygen saturation level did not increase and patients got dependant to oxygen supplementation through mask with reservoir bag. In bronchoscopy, black-and-white exudates and black membrane that blocked the main bronchus in the transplanted lung was observed. After bronchial lavage the membrane and exudates were successfully removed and patient received antibiotics for Aspergillus infection and Methylprednisolone pulse therapy for evidences of graft rejection. Despite success in treatments of the mentioned complications, the condition of the patient deteriorated and she became totally dependent to supplement oxygen, oxygen consumption level had increase and pulmonary artery pressure was increasing gradually. With suspicion to pulmonary artery stenosis, bronchial CT-Scan with contrast was performed 13 days after transplantation surgery which showed a 50% stenosis. Trans-esophageal echocardiography also showed a stenosis with 40 mmHg gradient. 18 days after transplantation surgery, percutaneous balloon angioplasty was performed which was initially successful but re-stenosis occurred. Seven days later, another balloon angioplasty with stent insertion was performed. After the procedure, the gradient has been removed. Patient was discharged 30 days after transplantation. Follow-up after 10 months revealed not stenosis and the stent was working properly. We conclude that pulmonary artery stenosis could happen very early after lung transplantation and percutaneous balloon dilation with stent insertion is an effective treatment.
P-234
COMPARISON OF Tc-99m DTPA AND Tc-99m MAG3 RENAL SCINTIGRAPHY FINDINGS IN ALLOGRAFT RECIPIENTS WITH ACUTE TUBULOINTERSTITIAL NEPHRITIS

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Tubulointerstitial nephritis occurs as a result of primary injury to renal tubules and interstitium. The acute form is often due to allergic drug reactions or to infections. Renal scintigraphy is a useful noninvasive diagnostic procedure for the evaluation of renal transplant complications. The aim of this study was to evaluate Tc-99m DTPA and Tc-99m MAG3 renal scintigraphy findings in renal transplant recipients with acute tubulointerstitial nephritis. A total of 60 renal transplant recipients were evaluated using both tracers. Out of these 60 patients, 5 had biopsy proven acute tubulointerstitial nephritis. Ten recipients with normal graft function were included as control group. Tc-99m DTPA and Tc-99m MAG3 renal scintigraphy was performed one day apart. For both studies, images were acquired every second for 1 minute (perfusion) and every 30 seconds for 20 minutes. The images were interpreted in relation to perfusion pattern, extraction ability and parenchymal retention of activity. Results: Perfusion was impaired in all patients in both studies. Concentration was decreased in all patients on DTPA and renogram curves in 2 patients exhibited a slightly descending pattern without a concentration peak. Initial uptake of tracer was decreased in all patients on MAG3. Significant parenchymal retention of activity was observed in all patients for both tracers. In conclusion, all patients with acute tubulointerstitial nephritis had abnormal perfusion and function with both agents. Although these findings can be observed in other allograft pathologies, a slightly descending renogram curve without a concentration peak on DTPA and significant parenchymal retention combined with impaired perfusion and decreased initial uptake on MAG3 might suggest the presence of acute tubulointerstitial nephritis.

P-235
A RARE CASE OF FOOT DROP AFTER DOUBLE LUNG TRANSPLANTATION

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We describe here a rare case of foot drop after lung transplantation surgery. Patient was a 26-year-old man with cystic fibrosis who received double lung transplantation in July 2008 at Masih Daneshvari Hospital, Tehran, Iran. Patient was extubated successfully 48 hours after transplantation. Patient complained about a vague pain in his legs which increased gradually to an agonizing level. The patient gradually developed bilateral foot drop. Patient also has a muscular weakness in his left arm and complained of tinnitus. Neurological examination revealed a peripheral polyneuropathy with 3+ and asymmetric tendon reflex and EMG/NCV approved the findings. After reviewing the patient’s drug and regarding the fact that patient’s cyclosporine level was lower than the normal range for lung transplantation, we decided to discontinue tubramycin prescription. Patients also received regular limb physiotherapy. The tinnitus resolved within a few days and patient has been discharged with good condition. Limb physiotherapy continued as out-patient treatment. After 2 months of lung transplantation, the foot drop of the patient improved significantly. After reviewing the case, the complication could be attributed to drug toxicity or patient’s position during the surgery. Such phenomenon was previously reported in some patients with liver transplantation, but we did not found such problem in lung transplanted patients.
P-236
ANEMIA IN KIDNEY TRANSPLANTED PATIENTS OF NAMAZEE TRANSPLANT CENTER

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Cardiovascular disease is the most common cause of death in the patients with good renal transplant function. The .Although a known cardiovascular risk factor, anemia in the renal transplant recipients has only recently been receiving an increasing attention. In a cross-sectional study (from September 1994 till September 2006), data was obtained from 600 patients followed at a single transplant center. Anemia was defined as hemoglobin (Hb) <130 g/L in males and <120 g/L in females. About one-third (30.83 %) of the patients were anemic. Serum Hb concentration was significantly correlated with the estimated glomerular filtration rate (eGFR) (abbreviated modification of diet in renal disease formula) (p < 0.001), female sex (p < 0.001), weight (p < 0.001), age (p < 0.001), serum creatinine (p < 0.001). None of the immunosuppressive medications or the use of angiotensin converting enzyme inhibitors was associated with a higher likelihood of anemia. Post-transplant anemia is a prevalent and under-treated condition. GFR is the most important predictor in post transplant anemia. Further studies are needed to determine whether the presence of anemia and its treatment will have an impact on long-term outcomes of this population.

P-237
EVALUATION OF EFFECT OF RENAL TRANSPLANTATION ON CORONARY ARTERY CALCIFICATION IN HEMODIALYSIS PATIENTS

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Vascular calcification is a strong predictor of cardiovascular and all-cause mortality. Coronary artery calcification is more frequent, more extensive and progresses more rapidly in CKD than in general population. It is also considered a marker of coronary heart disease, the main cause of increased morbidity and mortality in patients on maintenance hemodialysis and transplanted patients. The aim of this study was evaluation of effect of renal transplantation on calcium scoring of coronary arteries of hemodialysis patients. The study included 23 patients (13 M, 10 F) aged 19-56 years (mean = 38.08+/− 13.49 y) hemodialyzed three times a week for 6 to 49 months (mean = 20+/-15.72m) whom underwent renal transplantation (RTX). The homocysteine, iPTH, calcium, phosphate and indices of lipid metabolism such as total cholesterol, HDL, LDL, triglycerides, were measured before and 6 months after RTX. To evaluate the coronary artery calcification, all patients underwent MDCT coronary CT using agatston technique calcium scoring (CS) and color Doppler ultrasound for IMT before & 6 month after RTX. Coronary artery calcifications prevalence was of 96% of dialysis patients with total CS ranged from 0 to 198, affecting more than two vessels inmore than 50% with higher calcium score level at left anterior descending (LAD). Mean total ca scoring was decreased significantly from pre RTX (39.82+/-63.05) to (24.34+/- 39.55) post RTX p < 0.001. Ca scoring was decreased from pre RTX (7.4 +/− 13.03) to (4.3+/- 8.54) post RTX p < 0.01 in left main artery and from pre RTX (15.76+/-23.53 ) to (10.23 +/− 15.81) post RTX p<0.01 in LAD & from pre RTX (7.8+/-14.98) to (5.1 +/− 9.57 ) post RTX p < 0.001 in Circomflex & from pre RTX (9.2 +/−17.18 ) to (4.7+/- 8.18 ) post RTX p < 0.01 in right coronary. The CS correlated significantly with age (r = 0.39; p < 0.005), P (r = 0.33; p < 0.05), CaXp product (r = 0.39; p < 0.05), iPTH (r = 0.43; p < 0.001) and with IMT (r = 0.56; p < 0.0001) before RTX. There was linear & meaningful correlation between CS and iPTH & ca- p product reduction after RTX. Renal transplantation reduces significantly coronary artery calcification of dialysis patients and it linearly correlate with decrease in iPTH & ca & p product at early period after renal transplantation.
Clinical outcome of renal transplantation among systemic lupus erythematosus (SLE) patients remains a topic of controversy. This study aimed to evaluate outcome of renal transplantation in patients with SLE. In a case control study, we reviewed the old charts of 33 patients who underwent renal transplantation due to end-stage renal disease (ESRD) caused by systemic lupus erythematosus in Shiraz organ transplant center between 1990 and 2008. The control group consisted of 33 non–lupus patients who were matched with cases for age, sex, race, type of allograft, number of previous transplants, and immunosuppression regimen. There were 29 female and 4 male. Twelve (36%) patients received kidney from deceased donors, 15 (45%) from living-unrelated, and 6 (19%) from living related donors. All the patients were first time kidney transplantation. Source of kidney in SLE patients did not have any significant correlation with mortality rate, graft failure, complications, and days of hospitalization (P>0.05). There was no statistically significant difference between outcome of SLE patients and duration of dialysis before transplantation (P>0.05). The mean duration of hospital stay was 23.38 ± 18.09 days in case group while it was 13 ± 7.33 days in controls (P= 0.006). One year graft survivals was 79% in SLE and 90.9 % in non-lupus patients (P=0.17). One year patient survivals was 93.9% for SLE versus 81.8% for non-lupus patients (P=0.258).9 patients in cases versus 11 in controls developed post transplant complications (P=0.59). Mean serum Creatinine level 2 weeks after transplantation was 2.28 mg/dL and 1.60 mg/dL in SLE and non-SLE patients respectively (P=0.114). In conclusion, although duration of hospital stay after transplantation was higher in SLE recipients, safety of renal transplantation is equivalent to the control group. Graft failure in SLE patients was not different among patients with different sources of kidneys.

Surgical outcomes and bladder function were assessed in a group of patients who had undergone ureterocystoplasty while awaiting renal transplantation. An observational cohort study was performed. A chart review was performed of 16 patients who had undergone ureterocystoplasty between 1997 and 2006. The postoperative assessment included measurement of bladder capacity and voiding cystourethrography findings. The median patient age at operation was 17 years (range, 3 to 44 years). The median follow-up was 38 months (range, 3 to 60 months). All patients achieved continence. The median increase in bladder capacity was 162 mL (range, 65 to 265 mL), representing a median proportional increase of 226% (range, 167% to 340%) of the original bladder capacity. None of the patients developed vesicoureteral reflux. Only 4 patients required subsequent intermittent catheterization to fully empty their bladders. Seven patients underwent renal transplantation within 3 to 7 months of ureterocystoplasty. In conclusion Ureterocystoplasty in patients awaiting renal transplantation is safe and effective. Good results can be achieved when care is taken to preserve the blood supply of the ureter. The results of this study have confirmed the desirability of preserving the ureters in patients awaiting transplantation who might require bladder augmentation.
TRANSPANTED DONOR C-LOOP ULCERS AS A CAUSE OF OCCULT GASTROINTESTINAL BLEEDING AFTER PANCREAS TRANSPLANTATION

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Simultaneous kidney-pancreas transplantation (SKPTx) with enteric drainage is an acceptable treatment for selected patients with type 1 diabetes mellitus and end-stage renal failure but it may be associated by complications such as gastrointestinal bleeding (GIB). Case report: 3 patients presented with severe anemia 3-6 months after SKPTx with enteric drainage. We had used a Roux-en-Y loop with end to end anastomosis to donor duodenal c-loop for enteric drainage in all 3 cases. Pancreas and renal function were normal. Stool occult blood testing was 4+ positive and lab data was consistent with severe iron-deficiency anemia. Assay for cytomegalovirus (CMV) antigenemia was negative. Upper and lower GI endoscopy were nondiagnostic. In the first case (23 y/o male) radiolabelled red blood cell (RBC) scan showed a source of bleeding in the center of abdomen. Because of recurrent need for transfusion the patient underwent laparotomy and intraoperative endoscopy through a small incision in the jejunoileal junction showed that the source of bloody stool was from proximal site of Roux-en-Y. A longitudinal incision in the c-loop showed multiple bleeding ulcers. Second and third patients were 26 and 27 y/o females with the same presentation who underwent operation w/o RBC scan and intraoperative finding were the same. In all 3 patients large ulcers were oversewed and the anastomosis revised to a side-to-side fashion for better drainage of donor pancreas. During the 18-24 months of follow-up the patients had no recurrence of anemia w/o any need to transfusion or iron supplements. In conclusion, high donor pancreas exocrine output associated with relatively low drainage of a small end-to-end anastomosis may be the cause of occult GIB after SKPTx. It is recommended to use a side-to-side anastomosis to prevent this complication.

COMPARATIVE STUDY OF RESULTS OF RENAL TRANSPLANTATION BETWEEN 3 GROUPS OF RECIPIENTS RECEIVED KIDNEY FROM RELATED, UNRELATED AND DECEASED DONORS

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Nowadays with the extension and development of renal transplantation centers, the best treatment of the patients with End Stage Renal Disease (ESRD) is renal transplantation. Renal allografts from deceased donors are being used in our center following legislation of the laws by the islamic parliament. Renal transplantation is evaluated by graft & patient survival. Therefore in this study graft and patient survival of recipients received kidney from related, unrelated and deceased donors were reviewed. Following preoperative examinations and live donor angiography, transplantation will be ready to perform. Renal transplantation was performed in 270 patients received kidney from unrelated and 44 from related and 125 from deceased donors. Graft and patients survival were measured. Statistical analysis was performed using SPSS soft ware, Kaplan – Meyer table, Cox regression and Logrank. In this study 439 patients were evaluated. There were no statistical differences ranged between 8 and 71 years (X between 3 groups. (P>0.1). One year graft survivals of recipients who had received kidney from deceased, unrelated and related donors were 90%, 93% and 89% respectively. Three year graft survival in the mentioned groups were 82%, 91% and 84% respectively and 5 year graft survival were 80%, 91% and 81%respectively. Statistical analysis showed no significant differences between 3 groups. (P>0.1) One year recipient survivals in the 3 groups were 95%, 98% and 93% respectively, 3 years patient survivals were 94%, 98% and 93% respectively and finally the 5 years survivals were 89%, 93% and 88% respectively which there were no significant differences. (P<0.05) In conclusion, There were no significant differences in 1,3 and 5 years graft and patient survivals between recipients received kidney from live (related or unrelated) and deceased donors. Therefore deceased donors can be used as a valuable source in our country.
P-242
HEART TRANSPLANTATION OR LIFE TRANSPLANTATION? TWO YEARS OF EXPERIENCE AT THE MASIH DANESHVARI MEDICAL CENTER

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Cardiac transplantation can be a breakthrough in the life of those with end-stage heart failure. However, starting complicated operations such as transplantation has a learning curve and accordingly, considerable morbidity and mortality for the initial cases are expectable. Since 2006, cardiac transplantation was started at the Masih Daneshvari Medical Center. The first few operations were performed under the support and assistance of experts from two other centers with considerable experience in heart transplantation. Case selection was mainly based on consensus building. According to the experience of the two older and more experienced centers of heart transplantation, we organized an integrated team consisting of specialists in nephrology, infectious disease, pulmonology, clinical pharmacology, immunology, physiotherapy, physical therapy, psychology, radiology, and pathology for cardiac transplantation. 15 patients have so far undergone cardiac transplantation, eleven of which are alive and functionally active. Regular follow-up of these patients has been associated with favorable outcomes; so far there are no cases of severe rejection or graft vasculopathy. Mortalities were mainly attributable to inappropriate case selection. Two patients died at the operating room and the remaining two succumbed to inhospital refractory heart failure. IN conclusion, the initial results have been promising, mostly thanks to the appreciable teamwork of the group as well as the surgeons’ close cooperation and support provided by other experts. Our early experience, including case selection and follow-up process was mainly based upon consensus and partly biased. We have been recently working to devise a comprehensive and applicable protocol so that our future results will be reproducible, more desirable, and statistically meaningful.

P-243
COMPARING THE QUALITY OF LIFE OF HEART TRANSPLANTED PATIENTS BEFORE AND AFTER CARDIAC TRANSPLANTATION; A SINGLE CENTER EXPERIENCE

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During the past years, quality of life has been taken into account in the analysis of heart transplant results, just like survival. We compared the quality of life of heart transplanted patients before and after cardiac transplantation. The quality of life of 11 patients (9 male, mean age 35 ± 9.6, range 24-54), who underwent cardiac transplantation between May 2006 and August 2008 at Masih Daneshvari Hospital were investigated according to the New York Heart Association (NYHA) functional classification. All eleven cases were classified at stage IV at the time of referral for transplantation. The quality of life in all patients improved substantially following cardiac transplantation, such that all subjects were categorized at stage II and took the ability to return to daily routine life. In conclusions, the results of this small study are comparable with the findings of previous larger investigations which have shown that although it being the last choice of treatment, heart transplantation can significantly improve the quality of life of patients with end-stage heart failure.
SIROLIMUS CONVERSION FOR PATIENTS WITH POSTTRANSPLANT MALIGNANCY

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Post transplant malignancy morbidity and mortality are important limitations in kidney transplantation. The incidence of malignancy has been estimated at 20% after 10 years of chronic immunosuppression. This retrospective study aimed to evaluate the benefit of switching from calcineurin inhibitors (CNIs) to sirolimus in post transplant malignancies. Six renal allograft recipients (4/2, m/f) of mean age 40 (25-56) years and mean time after transplantation of 54 ± 33 (11-108) months were switched to sirolimus-based immunosuppression abruptly, because of the presence of biopsy-proven malignancy. (3 β cell lymphoma, 1 Kaposi sarcoma, 2 non melanoma carcinoma of skin). The mean follow up after sirolimus conversion was 8.5 ± 3.8 (4-12) months. Only one patient with lymphoma and CNS metastasis was on chemotherapy. The mean of creatinine before and after switching was 1.5±0.5 and 1.2±0.2 mg/dl, respectively. All patients had good cancer evolution after one month with no new tumor during follow up. In conclusion, sirolimus provide a potential treatment option in the management of post transplant malignancies and should be considered for use in renal transplant recipients who develop the disease.

RELATIONSHIP OF HLA ANTIGENS AND CRYOGLOBULINAEMIA IN HEPATITIS C VIRUS

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We tried to find the relationship between human leukocyte antigens (HLA) and cryoglobulin positivity in hepatitis C virus (HCV) infected individuals. Eligible individuals selected from pre and post renal transplant settings were divided into three groups. Group A (n=301) consisted of normal controls, while group B (n=200) comprised of pathological controls that were HCV antibody (anti-HCV) positive but negative for cryoglobulins. Group C comprised of 56 anti-HCV positive, cryoglobulin positive patients. HLA-A, -B and -DRB1 loci were typed by polymerase chain reaction (PCR) method and relationship between HLA antigens, anti-HCV status and cryoglobulinaemia was analyzed. HLA-A*02, -B*57 and -DRB1*03 were more frequently found among group C members as compared to groups A and B. Only HLA-B* 57 occurrence reached statistical significance (14.3% versus 6% and 4%, corrected P-value = 0.045 and 0.012 and OR = 2.6 and 4 respectively). No differences in the distribution of HLA antigens were seen among healthy and pathological controls. In conclusion, the presence of HLA-B*57 confers susceptibility to cryoglobulinaemia in HCV infected patients in our population. HCV positive renal transplant recipients with these alleles should be monitored for cryoglobulin formation.
**P-246**

**WHO IS WILLING TO DONATE AN ORGAN?**

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Organ donation is a cultural activity. Years of education and cultural development are required to increase organ donors and hence enhance organ transplantation. In the way of efficient development and implementation of educational and cultural modalities, an especial attention should be paid to the characteristics of the target groups. In our study, we report the characteristics of organ donation volunteers in our country. Using the organ donation database at Organ procurement unit of Masih hospital, Tehran, Iran, we used the registration data from 2005 to September 2008. Demographic data about organ donation volunteers’ database was extracted. A total of 182877 volunteers were registered at our database. 10025 (54.7%) of the volunteers were female. 2.2% were under 18 years old, 20% were between 18 to 25 years old and 77.8% were above 25 years old. Regarding their education, 8.64% were under high school diploma, 36.8% had high school diploma and 53.7% had bachelor or higher degree. Thirty percent of volunteer were introduced by their friends and relatives and 25% got familiar with the unit through the media. In conclusion, in Iran, people with a higher education are most likely to donate an organ. Also, the role of person-to-person contact was more prominent than the media. Reaching out to people with no or a lower academic degree and a stronger role of the media may cause an increase in the number of organ donation volunteers.

**P-247**

**COMPARING STUDY OF GRAFT SURVIVAL, DELAY GRAFT FUNCTION AND SLOW GRAFT FUNCTION BETWEEN THE CADAVERIC AND LIVE DONORS KIDNEY RECIPIENTS**

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This study was designed to evaluate graft survival, delay graft function and slow graft function between the cadaveric and live-donor kidney recipients. Sixty nine cadaveric kidney transplantations were done since may 2008 in Labbafinejad Hospital, Shaheed beheshti University of Medical Science, Tehran, IRAN. Demographic data, graft survival, delay graft function (DGF), slow graft function (SGF) and mortality rate were compared with a control group. We defined DGF as the need to dialysis in the first post-operative week and SGF as serum creatinine of higher than 2mg/dl on 3rd post-operative day. **RESULTS:** 65 (group 2) and 128 (group 1) kidney recipients from cadaver and live donor were enrolled into the study. Male/Female ratio in group 1 was 88/40 and in group 2 was 42/23 (p value=0.6). Mean age in group 1 was 44/6+-10/8 and in group 2 was 44/6+-11/3 (p value=0.9). Graft survival was not different between the two groups (p value=0.5) The first day creatinine in group 1 was 3/7+-2/25 and in group 2 was 4/7+-2/8 (p value=0.01). The 3rd day creatinine in group 1 was 2/02+-1/7 and in group 2 was 2/6+-2/4 (p value=0.04). The 7th day creatinine in group 1 was 1/8+-2 and in group 2 was 1/7+-1/4 (p value=0.6). 5 patients (%3/9) in group 1 and 3 (%4/8) in group 2 needed dialysis in the first post-operative week (p value = 0.7). Total complication rate was 6 (%4/7) and 5 (%8/1) in groups 1 and 2 respectively (p value=0.3). Mortality rate in group 1 was 4(%3.1) and in group 2 was 7(%10/9) (p value=0.03). In conclusion, Although the rate of SGF was greater in the cadaveric group in our study but DGF and graft survival was not different between the two groups.
P-248
INTERNIST, UROLOGIST AND NEPHROLOGISTS' KNOWLEDGE AND ATTITUDE TOWARD ORGAN AND TISSUE DONATION AND TRANSPLANTATION IN EMERGENCY AND INTENSIVE CARE UNITS

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Urologist, Internist and nephrologists' role in the cadaveric organ and tissue donation and transplantation is very important. This study assessed the specialists' knowledge and attitude toward organ and tissue donation and transplantation. The cross-sectional survey consisted of 560 internist, urologist and nephrologists who completed a confidential questionnaire that aimed to assess their existing knowledge and attitude toward organ and tissue transplantation. The assessment was done with questions about attitude and knowledge and ultimate data were analyzed by SPSS and p<0.05 was considered as a significant level. At the present study, results showed that 435 specialists (78%) were inclined with organ donation after death. The most important reason was humanity and helping to each other. whereas, just 140 specialists (25%) had positive attitude toward organ donation on alive persons about the legal aspects of donation just 51 subjects (9%) were informed and 32 subjects (6%) did not have any information about the legal basis of Organ and Tissue Donation and Transplantation. about the knowledge and financial aspects of donation just 265 subjects (47%) and 221 subjects (40%) were qualified as informed persons. The specialist subjects have an appropriate attitude toward Organ and Tissue Donation and Transplantation. They have significant gaps in legal basis knowledge and financial properties regarding the organ and tissue donation and transplantation. The education of specialist is important as legislation efforts and establishment of transplantation procurement and network.

P-249
HEALTH CARE UTILIZATION AND CORRELATED FACTORS AMONG KIDNEY TRANSPLANT RECIPIENTS

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Concerns in accessibility to healthcare utilization of kidney transplanted recipients according to newly reported studies based on some barriers and inequalities, have been increased. Current study was performed with the aim of assessing health care utilization after kidney transplantation in a single center in Iran between 2005 and 2006. A longitudinal study on 466 stable adult kidney recipients was performed in Baqiyatallah Hospital, Tehran, Iran, 2005-2006. Demographic (age, sex, marital status, educational level, monthly income) and clinical data (sources of kidney, End Stage Renal Disease (ESRD) causes, history of previous rejection) were registered. Patients were followed 12 months for their health care utilization including 1) hospital admissions, 2) Emergency Department visits, 3) outpatient physician visits and 4) Home based health care nursing visits. Of 485 patients enrolled in our study, 466 (96.1%) completed our follow-up and entered data analysis. Hospital admission, emergency department visit, physician visit and home nurse use, were observed in 268(57.5), 146(31.3), 400(85.8), and 19(4.0) recipients, respectively. More hospital admissions were reported in male kidney recipients (P=0.011), those with Diabetes Mellitus (DM) as ESRD cause (P=0.030), those who had received kidney from Living Unrelated donors (LURD) (P=0.001). Also, we found a statistically higher rate of emergency department visits by females (P=0.001), singles (P=0.050), those with higher education (P=0.010), those with higher income (P=0.006), and those kidney recipients who had received allograft from LURD source (P=0.047). This study highlights variables such as gender, marital status, income, educational level, ESRD cause and source of kidney as correlates of use of health care after kidney transplantation. According to this finding, we recommend to involve these neglected variables to health care planning of kidney transplantation systems for decreasing costs.
P-250
EVALUATION OF BRAIN DEATH REASONS IN DONORS OF ORGAN FROM 2002 TO 2005 IN MASHAD, IRAN
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Transplantation is the only way to rescue the patients who are at end stage of kidney, liver, heart, lung and pancreas diseases. Since the only source to access the suitable organ for transplantation is using homografts, we have decided to study brain death reasons in the cadavers which we transplanted their kidney, liver, heart, lung and pancreas to other patients. We studied 86 deceased donors (kidney, heart, liver, cornea) who had admitted in ICU of Imam Reza hospital. Then reasons of admission and kinds of head injury were evaluated. We studied 86 brain death patients including 20 female (33/3%) and 66 male (76/7%). Reasons for admission are divided into 4 groups: 9 brain tumor, 68 head trauma (crashing, fall out of height, strike ground), 6 cerebral hemorrhage without trauma (such as aneurysm and brain stroke) and 3 cases of cerebral hypoxemia (suffocation, apnea after epilepsy). We found that head trauma specially caused by crashing is the most common reason for brain death. It is more common in men and in the age range of 10-30 years.

P-251
THE CAUSATIVE FACTORS IN DECEASED DONOR RELATIVE PERMISSION FOR ORGAN DONATION IN ISFAHAN
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According world wide data on brain death (GCS:3) cases only one third of them going under organ harvest, one third do not have donor criteria for transplant and in the last one third we cannot take permit from deceased relative to organ dedication. Like this, we have similar condition in Isfahan. Review of causative factor in donor relative permission for organ dedication can help us to spread this culture in the societies. Material and Methods: This retrospective study reviewed all brain death reported cases in 8 last years in Isfahan. All cases divide in three group; organ dedicated, cases who did not fill donor criteria and the third group that we did not have donor relative permission for organ dedication. Third group were divided into 6 subgroup. Results: From May 2000 to May 2008, 372 brain death (GCS: 3) were reported in Isfahan. 35% of cases did not fill donor criteria and 35% were organ dedicatior. In third group (30%) who did not underwent dedication causative factor were religious (20%), social and cultural (30%), did not trust to brain death diagnosis (30%), unsatisfied to treatment approach (5%), believe to patient cure (13%) and credit request (2%). Conclusion: According to our data, 30% of brain death case did not dedicate organ so we should waste our supportive policy to dedicated family by material and spiritual concrete, cultural, social and educational programs on public communications. Organ dedication society formation in all city may effective way to decline the third group.
P-252
COMPARISON OF ANTIGENEMIA ASSAY AND SEMIQUANTITATIVE POLYMERASE CHAIN REACTION TEST FOR MONITORING ACTIVE CYTOMEGALOVIRUS INFECTION IN ALLOGENEIC HEMATOPOIETIC CELL TRANSPLANT RECIPIENTS.

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We sought to compare the antigenemia assay and in-house semiquantitative polymerase chain reaction to monitor human cytomegalovirus infection after transplant in hematopoietic cell transplant recipients. A pp65 antigen test for polymorphonuclear leukocytes and a semiquantitative polymerase chain reaction for whole blood were performed for 201 samples obtained from 26 hematopoietic cell transplant recipients over a 3-month surveillance period. Results: Fourteen episodes of antigenemia positivity were detected in 7 patients in whom human cytomegalovirus DNA loads and pp65-positive cells ranged between < 10^2 to 2.96 × 10^4 copies/mL and 0-35/5 × 10^4 polymorphonuclear leukocytes, respectively. A significant correlation was detected between human cytomegalovirus DNA load and the antigenemia test. A receiver operating characteristic analysis determined 5000 copies/mL of human cytomegalovirus as the threshold value for initiation of gancyclovir therapy. Based on a comparison of the pp65 antigenemia assay, quantification of human cytomegalovirus DNA in whole blood can be used to guide clinical management of hematopoietic cell transplant recipients. This approach may have important advantages including superior sensitivity and efficient monitoring of preemptive therapy, allowing inclusion of kinetic criteria in clinical guidelines. Furthermore, a high human cytomegalovirus load among patients with grade II-IV acute graft-versus-host disease may indicate a high risk of human cytomegalovirus disease among hematopoietic cell transplant patients. Human cytomegalovirus reactivation must be monitored using more-sensitive assays such as real-time polymerase chain reaction.

P-253
WASHING WITH THE WISCONSIN SOLUTION DURING LIVER TRANSPLANTATION IN PEDIATRIC CASES

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The Wisconsin solution contains 115—120 meq/L K+. The perfusion of the blood of the receiver into the liver of the donor causes a temporary increase of 1—2 meq/L K+. However, this increase may be dangerous particularly in pediatric cases. We present a 7.5 month old, 7200 gram female baby who was diagnosed with neonatal cholestatic hepatitis and underwent surgical operation as a liver transplant recipient. Five hundred ml protective Wisconsin solution was given to the left lobe of the liver which was taken from the mother. K+ value of the receiver at the end of anhepatic phase was 4.5 meq/L. In order to clean the donor liver from the Wisconsin solution and particularly from K, the washing solution was prepared by putting 100 ml of %20 albumin concentrate in to 1000cc dextrose%5 before the neohepatic phase. 250 cc of this solution was given to donor liver until the washing liquid that expels from the donor liver became limpid. As the washing was considered to be inadequate, this process was sustained by giving 800 cc washing solution. The first K+ value measured after reperfusion was 5.5 meq/L. The operation was completed without any complication and no problem was encountered in 6 month postoperative follow up. No information was found in literature regarding what amount of washing solution is to be used for reducing the K+ burden that occurs on the receiver as a result of K+ rich Wisconsin solution (115—120 meq/L) which is used in order to protect the organ during liver transplantation. Organ washing procedure is conventionally extended until washing solution becomes clear. However, in pediatric cases an increment of 1meq/L K+ may be of importance. For this reason in pediatric cases we propose that the washing procedure not be extended until the washing solution becomes clear but until the 1000cc albumin dextrose solution finishes.
P-254
DOES GENDER INFLUENCE THE RISK OF PERIOPERATIVE COMPLICATIONS IN DONORS OF LIVING-DONOR LIVER TRANSPLANTATION?

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The safety of the healthy donor must be the first consideration during living-donor liver transplantation (LDLT). There are data demonstrating a gender dimorphic response of the liver, favoring female liver, for various stresses. However, it is not clear whether this information may translate into improved outcome in clinical setting. The aim of this study was to determine whether the gender of donors is a risk factor for occurrence of perioperative non-surgical complications in donors of LDLT. After reviewing the data of consecutive LDLT patients who underwent a lobectomy between May 2002 and September 2007, the patients were divided into two groups based on their gender. The studied perioperative non-surgical complications were hypotension, hypertension, hypoxemia, hypothermia, need for transfusions, respiratory complications (atelectasis, pleural effusion, pneumonia, and pulmonary thromboembolism [PTE]), acute kidney injury (>50% increase in serum creatinine from the baseline), deep vein thrombosis (DVT), and cardiac morbidities. One hundred forty-one donor lobectomies were performed in 59 females (41.8%) and 82 males (58.2%) during the study period. The mean age 10.0 years, 8.3 years and 35.5 values of females and males were 35.1 respectively (p>0.05). Females had significantly higher body mass index 3.1 kg/m², p=0.022). Thirty-five 3.5 kg/m² vs 24.2 values than males (25.7 females (59.3%) and 53 males (64.6%) had at least one intraoperative complication (p=0.32). The respective incidence of overall postoperative complications in females and males were also similar (59.3% and 64.6%, p=0.320). Both genders were comparable with regards to every single perioperative complication that was included in the study (p>0.05 for all). There were no mortalities in these patients. The length of stay in the hospital was 4.1 days, 5.0 days and 7.4 significantly longer in females than males (9.1 respectively, p=0.037). In conclusion, our results clearly demonstrate that gender has no impact on the incidence of perioperative non-surgical complications in donors of LDLT.

P-255
FACTORS AFFECTING EARLY AND LATE EXTUBATION IN LIVER TRANSPLANT PATIENTS

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Tracheal extubation is a critical stage and expensive practice in patients undergoing major operations such as liver transplantation. This study was carried out to determine factors affecting extubation time in liver transplant patients. From 2003 to 2006, all patients undergoing liver transplantation in Nemazee Hospital affiliated to Shiraz University of Medical Sciences entered our study. All patients were anesthetized identically and the time of extubation was based on standard protocol of extubation. The patients were divided into two groups of extubated after admission in less and more than six hours. The effect of 19 pre and post operative factors on extubation was also evaluated. Two hundred patients (Group 1=121; Group 2=79) entered the study. Twenty seven patients died in postoperative course and 37 required reintubation among them, 14 were from the extubated group. A significant correlation was observed between amount of bleeding during operation, duration of surgery and blood pressure and the time of extubation. They early extubated group had significantly two days less stay in ICU. It seems that duration of surgery, bleeding during operation, and an abnormal blood pressure may delay the time of extubation. An early extubation may result into a decrease in duration of ICU admission.
Liver failure is still a significant clinical problem after transplantation surgery, tissue resections (Pringle maneuver), and hemorrhagic shock. The restoration of blood flow to an ischemic region leads to tissue injury at a greater rate than the original ischemic insult, an event called reperfusion injury. Despite advances in surgical techniques, I/R injury remains a significant clinical problem. In this research, we studied the effect of simvastatin pretreatment on liver and lung injury induced by hepatic ischemia/reperfusion. Rats were subjected to 30 min of ischemia followed by 24 hr of reperfusion. Simvastatin (10 mg/kg) administered orally since 3 days before operation. After reperfusion time, serum ALT, AST, LDH and TNFα level were studied and liver and lung tissue were stained with hematoxylin and eosin and TUNEL for detecting apoptotic cells. The serum aminotransferase activity, LDH and TNFα level were increased markedly by hepatic I/R, which were suppressed significantly by simvastatin. Tissue injury index and number of apoptotic cells via TUNEL staining in liver and lung were higher in I/R group compared to I/R+simvastatin group. These results suggest that melatonin ameliorates I/R-induced liver and lung tissue damage by inhibiting the level of inflammatory and the apoptotic pathways. Therefore, simvastatin administration may provide protection against the adverse effects of I/R injury in liver transplantation.

Early and accurate detection of decreasing glomerular filtration rate (GFR) is critical to prevent early graft rejection in the post-transplantation period. Serum creatinine has several drawbacks as a marker of GFR, so serum cystatin C has been proposed as a better alternative GFR marker. We prospectively evaluated the diagnostic value of cystatin C measurements compared with creatinine in the early post-operative phase. In 78 renal recipient patients serum creatinine and cystatin C were measured on the 3rd, 7th and 14th post-transplantation day. GFR was established by creatinine clearance with the cut off at 80 ml/min/1.73 m2. The correlation between serum creatinine and cystatin C with GFR was determined. Sensitivity and specificity of these markers were analyzed by R.O.C procedures. There were 78 renal recipient patients (51 male, 27 female) with the mean age of 34.56± 13.36 years and mean body mass index (BMI) of 22.36± 3.46 kg/m2. Serum cystatin C was not influenced by gender, age and BMI. There was a significant correlation between serum creatinine and cystatin C levels with GFR on 3rd, 7th, and 14th days (P<0.001). Analysis with R.O.C procedures showed that in detection of decreasing GFR (GFR< 80 ml/min/1.73 m2 on the 7th day (P= 0.023, AUC= 0.694). Sensitivity and specificity of serum cystatin C was 67.7% and 77.9% respectively on the cut off point of 2264 ng/ml. Cystatin C has good sensitivity to estimate the renal function in the early period of transplantation, but its value as a marker of GFR was decreased at the end of first week.
P-258
TIME AVERAGE CYCLOSPORINE MAXIMUM LYMPHOCYTE LEVEL IN STABLE DE NOVO KIDNEY TRANSPLANT PATIENTS: TWO YEARS FOLLOW-UP
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We aimed to determine the temporal variation of the time average Cyclosporine-A (CsA) maximum lymphocyte level (LTAML) in stable rejection-free De novo kidney transplant patients. Time average maximum lymphocyte level (LT1:30L) and whole blood level (BT1:30L) were determined simultaneously at one and a half hour after drug ingestion in 32 CsA-treated patients with stable graft function. A total of 149 blood samples were obtained at 0.5, 1, 2, 3, 6, 12 and 24 months post-transplantation. CsA LT1:30L and BT1:30L were compared retrospectively among each other and in relation to the total lymphocyte count (TLC) and dosage. Mean CsA LT1:30L and BT1:30L at 0.5, 1, 2, 3, 6, 12 and 24 months were 104.6, 82.2, 77.3, 73.7, 59.2, 61.2, 49.2 pg/lymphocyte and 2096.5, 2112.4, 1838.5, 1591.3, 1220.8, 1237.8, 1142.2 ng/ml, respectively. Mean TLC and serum creatinine remained quiet stable ranging between 1407 to 1800 lymphocyte/ml and 0.8 to 1.1 mg/dl, respectively, throughout the study period. Mean CsA dosage were 4.3, 3.5, 3.1 and 2.5 mg/Kg at 3, 6, 12 and 24 months post-transplantation. CsA BT1:30L failed to correlate with LT1:30L (R2 = 0.026) and TLC (R2 = 0.048). Similarly, CsA LT1:30L correlated poorly with dosage (R2 = 0.082). This was related to significant inter-patients variability in the LT1:30L (up to 12 fold) within each CsA dosage. In contrast, LT1:30L exhibited a significant exponential relationship with TLC (R2 = 0.40). In conclusion, ur results clearly confirm our previous findings on the poor association between CsA intra-cellular level and CsA dosage, whole blood concentration and the TLC as an indicator of the immune state. In addition, they establish new guidelines which are in agreement with our previous observations, for a simplified safe LTAML for CsA therapy monitoring during the first 2 years post-transplantation.

P-259
ACCURACY OF PULSE OXIMETRY IN THE DETECTION OF HYPOXEMIA IN LIVER TRANSPLANT CANDIDATES (A PROSPECTIVE STUDY)
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Hepatopulmonary syndrome(HPS) is characterized by hypoxemia and intrapulmonary vasodilation and develops in patients with liver disease. It is important to diagnose HPS, as the syndrome is associated with high morbidity and mortality. Although Orthotic liver transplantation (OLT) has been shown to reverse HPS, little in known about the long term natural history of patients with HPS or the optimal timing for OLT. The aim of this study is to investigate the accuracy and utility of pulse oximetry in the detection of hypoxemia (PaO2<65). Three hundred thirteen transplant candidates unrolled in this study. Arterial oxyhemoglobin saturation was obtained by pulse oximetry and compared with simultaneous arterial blood gas (ABG) oxyhemoglobin values. (SaO2) biase difference). SPO2 overestimated in 82.11%, and 16.29% had a bias of 4% or greater. SPO2, SaO2, PaO2 <65 or A-aO2 gradient > 15 were associated with more significant bias (P=0.000). SPO2 overestimated in 82.11%, and 16.29% had a bias of 4% or greater. SPO2, SaO2, PaO2 <65 or A-aO2 gradient > 15 were associated with more significant bias (P=0.000). SPO2 and SaO2 were less than 94% in 7.99(N: 25) and 20.77% (n: 65) of the patients respectively.
P-260
ISCHEMIC PRECONDITIONING OF THE LIVER REDUCES THE SEVERITY OF ISCHEMIA/REPERFUSION INDUCED PANCREATITIS

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Preconditioning by brief exposure to ischemia not only protects the organ against subsequent severe ischemia damage but also has protecting effect on other organs which is called remote preconditioning. Our aim in this study was to evaluate the protecting effect of brief liver ischemia on pancreas tissue against severe ischemia/reperfusion-induced pancreatitis. This study was performed on 30 male wistar rats. Ischemic preconditioning of liver was performed by clamping of hepatic pedicle for 10 min and ischemia/reperfusion of pancreas was performed by 30 min clamping of inferior splenic artery and then 1hr reperfusion. Rats were divided into three groups (10 rats in each group). One group as sham operated group without clamping of any artery. The second group underwent ischemia/reperfusion induced pancreatitis without ischemic preconditioning of liver and the third group underwent ischemic preconditioning of liver and then ischemia/reperfusion of pancreas. Ischemic preconditioning, applied prior to induction of pancreatitis, caused the and histological signs of reduction in plasma lipase, plasma interleukin-1 pancreatic damage but plasma interleukin-10 were not significantly different between groups. Ischemic preconditioning of liver was not caused any alteration on liver enzyme. We concluded that ischemic preconditioning of liver reduces the severity of ischemia/reperfusion induced pancreatitis. These effects are partly related to the reduction of proinflammatory interleukin -1.

P-261
EFFECTIVE FACTORS ON TRANSFUSION IN ORTHOTOPIC LIVER TRANSPLANTATION, A SURVEY IN SHIRAZ TRANSPLANT CENTER

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Orthotopic liver transplantation (OLT) has historically been associated with massive blood loss and transfusion. This study evaluated the factors associated with blood loss and blood product requirement in patients who were operated with piggyback technique. The medical records of all OLT patients performed between March, 10, 2002 and May, 21, 2008 was reviewed. Primary outcomes included intraoperative blood loss as recorded by the anesthesiologist and use of blood products. There were 261 liver transplants performed during 6 years study period (66% male, mean recipient age 38.8 y/o). Mean blood loss was 3558mL and mean transfusion requirement was 5.4 units packed cell(PC), 2.6 units FFP & 1.7 units platelets. 25(9%) recipients required more than ten units and 7 recipients (2.7%) required no packed cells intraoperatively. Laboratory values associated with increasing estimated blood loss include: lower starting hemoglobin, higher starting INR, lower starting platelet count, higher initial central venous pressure (CVP) and increasing total anesthesia time. The amount of blood loss increased with male gender and older age. FFP and platelet use was increased in a manner similar to blood loss and PC usage for laboratory values, initial CVP and anesthesia time. Correlation test between data and blood loss revealed a decrease in blood loss with the passage of time (P<0.05). The major factors predicting the usage of blood products were initial INR, platelet count, hemoglobin and older age. Improvement in the experience of the team has a dramatic role in decreasing blood loss and blood products transfusion.
THE PREVALENCE OF GLUTATHIONE S-TRANSFERASE T1 (GSTT1) NULL GENOTYPE IN IRANIAN LIVER TRANSPLANT RECIPIENTS.


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To improve the evolution of transplants we need to identify risk biomarkers of morbidity and loss of allograft. In liver transplant (LTX) recipients, an association has been demonstrated between the presence of mismatch for glutathione S-transferase T1 (GSTT1) and the development of de novo immune hepatitis (IH). The differences in the genotypes of codifying metabolic enzymes between donors and recipients seem to be a prognostic biomarker in order to identify individuals at risk of complication following liver transplantation (LTX). According to previous studies if the patient is null phenotype and the donor is positive (GSTT1 Mismatch) then the patient should be monitored in the long-term for development of atypical auto antibodies and the appearance of de novo Immune hepatitis and graft dysfunction. Atypical auto antibodies have been shown to be directed to the enzyme GSTT1, a 29-kDa molecular weight protein, expressed abundantly in the liver and kidney. The aim of this study was to determine the prevalence of GSTT1 genotype in the Iranian population, who had LTX from August 2007 to May 2008 in the Organ Transplantation Center affiliated with Shiraz University of Medical Sciences. Determination of GSTT1 in 54 recipients was carried out by an assay based on internal standard controlled polymerase chain reaction (PCR). DNA from the peripheral blood samples of subjects with positive GSTT1 alleles yielded amplification of a 492-bp fragment. As a positive control a fragment of beta- globin was also amplified. Half of our patients (27/54) had null genotype. This is a high prevalence. But determination of GSTT1 genotype in both donors and recipients are important because it was previously confirmed that only with one of the four possible genetic combinations (null recipient/positive donor), an alloimmune response triggers the production of anti-GSTT1 antibodies. Our study is a preliminary report and further research is required in order to elucidate whether in LTX recipients with GSTT1 mismatch, anti-GSTT1 antibodies will be produced and an alloimmune reaction targeted at the allograft will lead to post transplantation IH or not.

ICAM-1 MOLECULE EXPRESSION AS A MARKER OF PRESERVATION INJURY IN RAT LIVER GRAFT

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During cold preservation of liver grafts, expression of tissue adhesion molecules has been reported, as a factor that is indicative of preservation injury. Some biochemical agents as well as increased levels of intracellular calcium, also play important roles in preservation injury during cold storage. In the current study, we aimed to test if the addition of a calcium channel blockers, Sodium nitroprusside, or glutathione into preservation solution, would reduce upregulation of adhesion molecules thus leading decreased preservation injury in rat liver. Fifty albino Wistar rats, weighing 200±50 g, were divided into 1 control (perfused with Wisconsin solution, without preservation) and 4 study groups of rat livers (ten livers each). Study groups livers were harvested, perfused, and preserved for 16 hours in 4 different solutions (Wisconsin solution alone, Wisconsin solution+verapamil, Wisconsin solution+Nanitroprusside and Wisconsin Solution+ glutathione). At the end of the preservation time, levels of graft tissue adhesion molecule (ICAM-1) expression, were analyzed. Sixteen hours’ preservation with Wisconsin solution alone and Wisconsin solution+ verapamil perfusates caused significantly more ICAM-1 expression than did 16 hours’ preservation with Wisconsin solution+Nanitroprusside and Wisconsin solution+glutathione perfusates (P=0.010). No significant difference was found for ICAM-1 expression between the Wisconsin solution+Nanitroprusside and Wisconsin solution+glutathione groups. Minimal ICAM-1 expression was demonstrated in the control group (P=0.0003). Addition of sodium nitroprusside and glutathione into the Wisconsin solution decreased levels of ICAM-1 molecule expression, which reflects lower levels of preservation injury. In this study, verapamil added to the perfusate/preservation solution for reducing the intracellular calcium accumulation, had no effect on tissue ICAM-1 molecule expression.
Neonatal hepatitis is an inflammation of the liver that occurs after birth. Different risk factors including metabolic disorders, microbial infections, genetic disorders, and also idiopathic agents, may have role in neonatal hepatitis syndrome. Viruses which causing inflammation of the neonatal liver either before birth, through their mother, or shortly after birth, where detect in the most of infants who develop neonatal hepatitis. In this study the molecular and antigenic prevalence of some viral agents where investigated for determination of the possible role of viral infections in clinical complications of infants with neonatal hepatitis. In this retrospective study 26 paraffin embedded biopsy and autopsy tissues of 22 infants with neonatal hepatitis between years: 1996-2007 were collected. The genome prevalence of hepatitis type B and type C viruses (HBV and HCV), and human cytomegalovirus (HCMV) were analyzed by qualitative PCR protocols. Also the antigen presentation of HBV and HCMV were studied by immunohistochemistry (IHC) methods. The genome of rotavirus, HCMV and HCV were detected separately in 1 of 26(3.8 %) paraffin embedded autopsy and biopsy tissues. Also 3 of 26 (11.5 %) of this samples were infected with HBV genome. Antigens of HBV were diagnosed in 1 of 26 (3.8 %) neonatal samples by IHC protocols, but HCMV antigens were not detected in the samples of infants with neonatal hepatitis. Also co-infections of these viruses with together were detected in some samples of these neonates. Detection of separate and co-infections of HCMV, HBV, and HCV genomes in autopsy and biopsy tissues of infants with neonatal hepatitis and also detection of HBV antigens in these patients, announced the need of completed study for determination of accurate role of these viral infections in clinical outcomes of patients with neonatal hepatitis.

Portopulmonary hypertension (PPH) is an uncommon but a serious complication of chronic liver disease. Once it develops, it is accepted as a poor prognostic factor in the follow up of patients with liver transplantation (LT). The presence of severe PPH is an accepted contraindication to LT. In this study we sought to identify the prevalence and the impact of PPH on the outcome of patients with LT. The records of 114 adult orthotopic LT patients operated at our institution were retrospectively analyzed. A complete transthoracic Doppler echocardiographic examination was performed preoperative and postoperatively. To identify PPH, patients with Doppler echocardiographically measured pulmonary artery systolic pressure (PASP) values of ≥30mmHg were accepted as PPH. In LT patients with PPH, etiology of the liver disease, postoperative mortality rates and pulmonary complications were noted. In 24 patients PPH was detected. The prevalence of PPH in patients referred for LT was 21.1%. The mean age was 44.0 ± 13.5 years and 18 patients (75.0%) were male. With regard to Child classification 16 (66.7%) patients were found to be in class C. The mean PASP was 46.6 ± 7.6 mmHg. Compared to preoperative values, a significant decrease in mean PASP was noted postoperatively (46.6 ± 7.6 mmHg vs 37.8 ± 15.5 mmHg; P<0.05). Concerning the postoperative pulmonary complications; pneumonia was developed in 7 (29.2%), pleural effusion in 6 (25%), and respiratory failure and right ventricular failure in 1 (4.2%) patient. Compared to patients with a normal PASP, postoperative pulmonary complication rate was higher, and the length of hospitalization was longer in patients with PPH (P<0.05), however no difference was observed in terms of mortality rates (P>0.05). This study indicates that the level of PASP decreases in patients with PPH following LT. Although there was an increase in pulmonary complications, we observed no alteration in mortality rates in this patients group. Therefore we can suggest that PPH may not be regarded as a contraindication for LT.
THE EXCELLENT RESULTS OF LIVER TRANSPLANTATION FOR TYROSINEMIA IN IRAN: A SINGLE CENTER EXPERIENCE


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Tyrosinemia could arise from both liver failure of any causes or from an inborn error of tyrosine metabolism and mainly lead to death in case of no treatment. The best choice of treatment especially in those with critical conditions is liver transplantation. In this study we report the outcome of liver transplantation in patients with tyrosinemia in our institution. Between January 2007 and March 2008, 9 patients with tyrosinemia and liver cirrhosis, which were confirmed by detecting plasma succinylacetone, have been receiving liver transplantation. Seven of 9 patients had received livers from living donors and the rest from deceased donors. Two patients were re-operated due to post-operative internal bleeding, and one patient developed wound infection. The mean duration of hospital stay in these patients was 17± 6.02 days. Diagnosis of acute rejection was made for 4 patients clinically and biochemically and have been treated with pulse of methyl prednisolone. One patient developed post transplant lymphoproliferative disorder and died. In conclusion, Despite of some complications, liver transplantation in our patients as the same as the other reports could be presented as an effective treatment for tyrosinemia resulting in clinical and biochemical improvement with good quality of life.

EVALUATION OF CARDIOPULMONARY COMPLICATIONS OF CIRRHOTIC PATIENTS IN LIVER TRANSPLANTATION WAITING LIST

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Eng stage liver disease is associated with several cardiopulmonary complications, which may adversely affect outcome. There are few, if any, published data in Iranian patients suffering from cirrhosis. The aim is to study the frequency of cardiopulmonary complications in Iranian patients with cirrhosis. In a cross-sectional study ninety-nine (61 men and 38 women, age 15-66, mean age 39.65) of two hundred and eighty-five patients who were registered in Shiraz liver transplantation waiting list from Jan. 2002 till Jul. 2004 were evaluated. Complete cardiopulmonary pre-operation work up was performed for them. Widened alveolar-arterial oxygen gradient [P9A-a)O2], hypoxemia, portopulmonary hypertension, tricuspid regurgitation, hepatic hydrothorax and restrictive lung disease were seen in 61.1%, 14.1%, 6.1%, 12.1%, 4% and 50% of these patients respectively. Widened alveolar-arterial oxygen gradient had negative correlation with presence of pulmonary hypertension (P=0.03) and tricuspid regurgitation (P=0.009). There was a positive relationship between severity of cirrhosis with hypoxemia (P=0.019), but not with portopulmonary hypertension and ventilatory restriction. Portopulmonary hypertension was more common in patient with cryptogenic cirrhosis (P=0.040). Interestingly two patients with portopulmonary hypertension did not have tricuspid regurgitation. Ventilatory restriction had significant correlation with presence of tense ascites (P=0.040) and hepatic hydrothorax (P=0.022). In conclusion, cardiopulmonary complications are common in Iranian patients with cirrhosis, widened alveolar arterial oxygen gradient and portopulmonary hypertension seems to have different pathogenesis in this study.
P-268
COMPARING THE EFFICACY OF FLUDARABINE-BUSULFAN WITH BUSULFAN-CYCLOFOSFAMIDE IN CML WITH ALLOGENEIC BONE MARROW TRANSPLANTATION
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Busulfan-cyclofosfamide is one of the conditioning regimens used before HSCT in CML patients. Using cyclofosfamide resulting toxicity and increased mortality. Recently favorable outcomes were seen with Fludarabine. The purpose of the present study is comparing the efficacy of these two regimens in CML in selected patient populations in Shari’ati hospital, Tehran, Iran. The stydy was conducted on CML patients were bone marrow transplanted in 2000-2005. The strategy of this center in one period was using Busulfan-cyclofosfamide and in the other period was Fludarabine-busulfan. All data such as complications and side effects of two regimens, mortality, cause of death and were analyzed in SPSS system and with Kaplan-Meyer methods, regression and chi-square test. P<0.05 were significant. Data of 47 patients in BU/CY group and 17 patients in FLU/BU group respectively were analyzed. Transplantation related mortality (TRM) was 25.5% in BU/CY group and 23.5% in FLU/BU group. The day 100 Overall survival was 4.3% in FLU/BU group but in BU/CY no patient were died (p<0.05). In conclusion, using Fludarabine-busulfan had favorable outcomes than Busulfan-cyclofosfamide regimens.

P-269
PERSISTENT SEIZURE IN THREE CASES OF THALASSEMA MAJOR LONG TIME AFTER BONE MARROW TRANSPLANTATION
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Seizure is a known complication of thalassemic marrow transplantation. Infections, cyclosporine, cytotoxic agents used in conditioning regimen, electrolyte imbalance all favor to this abnormality. Herein three cases of thalassemia major who transplanted with Busulfan 15mg/kg and cyclophosphamide with 200 mg/kg and with prophylaxis of graft versus host disease cyclosporine and prednisolone we report persistent antiseizure dependent clinical courses seven years after successful transplantation, the three cases which is reported with an average age of 10 years had been transplanted with the conditioning regimen mentioned above, the first seizures of them had been started in the first three months of transplantation which was controlled with phenytoin and carbamzapin with clobium in different situations. Results: the first attacks of seizure considered as a transient side effect of cyclosporine but the persistency of the seizures present after even seven years of transplantation in a case and the anticonvulsive agents not possible to discontinue up to now, the type of seizure was grandmal in all cases. Among the specific causes of seizure in thalassemic marrow transplantation was busulfan In this setting, because of the fat solubility of this drug especially in the brain and neuronal damage it is expectable that the seizure be persisted even years after marrow transplantation. The natural courses of these three cases remind us that the dosage of busulfan in the conditioning regimen of thalassemic marrow transplantation needs to be modified and the seizure can be life threatening so long time anticonvulsant is mandatory.
P-270
HOW IT WAS POSSIBLE TO TRANSPLANT AFGHAN CADAVERIC KIDNEY TO AFGHAN RECIPIENT IN IRAN

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It should come as no surprise that 1.5 million Afghans as refugees in Iran have no choice but using Iran’s healthcare systems. Afghan refugees afflicted with end-stage renal disease (ESRD) are a case in point. As a result Iran has Afghan refugees needing renal transplantation. Although Iran has no renal transplantation waiting list, some refugees may wait for renal transplantation for several years. Iranian model of organ transplantation limits organ transplantation of foreigners to Iranian to limit the possible black market of organ retrieval from low socio-economic class refugees. As a result, an organ harvested from a foreigner brain death can only be allocated to a donor of their homeland. In our unique experience an Afghan brain death was occurred in Iran in 2007. There were 2 Afghans with end stage renal disease who had been waiting for kidney transplantation for a long time. Although it was suitable for organ harvest, no access was possible to any family members who could sign consent form. As a result, organ procurement unit of Massih Daneshvari hospital started a difficult work through a contact with Ministry of foreign affairs, and then with Embassy of the Islamic Republic of Iran in Afghanistan, got involved in finding the family of the brain death patient. In one day, in a village, family was found, and was invited for consent. Consent was achieved and organ donation was done. This is a new approached ethics of international collaboration for kidney transplantation in refugees. This report not only sheds light on the characteristics of Iranian transplantation system, but also highlights the impact of timely decisions of an organ procurement unit in special cases.

P-271
CYCLOSPORINE INDUCED NEPHROTOXICITY IN RENAL TRANSPLANT RECIPIENTS: CLINICAL SIGNIFICANCE OF FRACTIONAL EXCRETION OF SODIUM, POTASSIUM, AND MAGNESIUM

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Cyclosporine induced nephrotoxicity in renal transplant recipients. Clinical significance of fractional excretion of sodium, potassium, and magnesium. Evaluation of fractional excretion of sodium(Na), potassium(K), and magnesium(Mg) as indicators for cause of early renal dysfunction after renal transplantation. A cross sectional comparative study on 59 live related renal allograft recipients from the 1st day of transplantation, and compared with 30 healthy controls. Serum creatinine was recorded from 1st day and %FE of Na, K and Mg were noted on 5th and 10th day. Spot CsA levels on 1st day and AUC were also recorded. The mean serum creatinine in renal transplant recipients at first day was 3.77+1.35 Vs .76+.16 in healthy control (p=0.000), on 5th day it was 1.76+1.3 Vs .76+.16 (p=0.000) and on 10th day it was 1.73+1.25 Vs .76+.16 (p=0.000). %FENa in recipients on 5th day was 3.2+5.9 Vs .55+.34 in healthy control (p=0.000) and on 10th day 2.2+2.5 Vs .55+.34 (p=0.000). %FEK in recipients on 5th day was 10.69+12 Vs 2.84+1.05 (p=0.172) in healthy controls and on 10th day 11.37+14.5 Vs 2.84+1.05 (p=.165). %FEMg in recipients on 5th day was 11.4+9.5 Vs 6.02+2.34 in healthy control and on 10th day 11.2+8.1 Vs 6.02+2.34. On comparison of patients of CsA-toxicity and patients with renal graft rejection only %FEMg have significant difference at 5th day (p=0.018) and at 10th day (p=0.039). Spot Cs-A at first day and AUC was not significant. In Conclusion, CsA therapy increase urinary excretion of Mg which is not dependent on dose of CsA. There is significant increase in %FEMg in patients having CsA-toxicity. Therefore %FEMg can be used as a chemical marker for differentiation of renal graft dysfunction in early post-transplant period.
P-272
OSTEOPOROSIS AND ITS RELATED RISK FACTORS IN RENAL TRANSPLANT RECIPIENTS

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Decreased bone mineral density is a common problem after kidney transplantation and osteoporosis has a major role in morbidity of these patients. This study was performed to evaluate the frequency of osteoporosis and determination of its risk factors. Renal transplanted patients who were between 17 and 50 years old and transplanted between 6 months to 2 years ago were included. Bone mineral densitometry (BMD) was performed by DEXA. Seventy-seven patients were enrolled. Frequency of osteoporosis was 26% (20/77). Mean age was 34.6±8.7. The most common site of osteoporosis was hip. 19 out of 77 BMD performed on hip were osteoporotic (24.7%) and 42 were osteopenic (54.5%). In spine 7.8% were osteoporotic, 67.5% were osteopenic. There was significant relation between post transplant creatinine (at the study time) and osteoporosis of hip (P=0.01). No relations were found between osteoporosis and age, sex, BMI, hemodialysis duration and cumulative dose of any drugs or methylprednisolone pulses. Z-scores <-1 in hip or spine had no relation with numbers of methylprednisolone pulses but had significant relation with total dose of cyclosporine A (p<0.001), prednisolone (p<0.001) and cellcept (p<0.05). Z-scores under -1 in hip was related with post transplants days (p=0.02). In conclusion, Osteoporosis is a frequent complication in this study. Detection and treatment of patients, who are in danger, may decrease the morbidity of osteoporosis.

P-273
OUTCOME OF PEDIATRIC RENAL TRANSPLANTATION IN LABAFI NEJAD HOSPITAL

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Kidney transplantation is the treatment of choice for children with end-stage renal disease. In Iran, a kidney transplantation program was started in the Labfi Nejad Hospital, Tehran in 1985. From 1985 to 2007, 320 children (mean age 11.52 years, 58.5% males) received their first renal transplant. All transplants were donations from live donors (7.4% live-related donors); 31% of patients were preemptively transplanted. The surgical complications were seen in 3% of patients. Three patients involved by malignancy in follow up period. The median graft survival time was 7.2 years. The rate of graft survival was 91% at 1 year, 83% at 3 years, 73% at 5 years, 65% at 7 years, 50% at 10 years and 37% at 12 years after transplantation. The survival rate of transplants improved significantly with time (p<0.05). In patients transplanted before 1993, the 5-year graft survival was 40% , 76% in patients between 1993 till 2000, and 80% in patients transplanted after 2000. At the same time intervals, the frequency of acute rejection episodes was 80% versus 59.5% and 34.6% (Pv<0.0001). Graft survival was negatively correlated with the frequency acute rejection episodes. In conclusion, graft survival in transplanted children significantly improved with time in Iran, thus reflecting greater medical and surgical experience, new immunosuppressive drugs, and better compliance. We are collecting the data of renal transplantation outcome in all pediatric renal transplantation centers in Iran and it will be ready till the congress beginning, thus this report will be corrected from multicenter data. This study can be a report of pediatric renal transplantation condition and outcome in Iran.
DIAGNOSIS AND TREATMENT OF ACUTE HUMORAL REJECTION AFTER KIDNEY TRANSPLANT

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Acute humoral rejection should be considered in patients with renal allograft dysfunction. We review the diagnoses, treatments, and outcomes of 8 patients who had acute humoral rejection after a renal transplant. Acute humoral rejection was diagnosed in 8 patients (3 women, 5 men; 16.7 years); 32 had undergone a renal transplant at our center at mean of 19.6 months (range: 10 days to 74 months) after the renal transplant. Acute humoral rejection was diagnosed via allograft dysfunction and allograft biopsy. Allograft biopsy showed a strong, diffusely distributed endothelial staining pattern of CD4 cells in the peritubular capillaries. The results of pretransplant lymphocyte subset analyses and the results of panel reactive antibody tests were normal in all patients. All patients were treated with plasma exchange. Acute humoral rejection occurred in the early postoperative period (<3 months) in 3 patients and in the late postoperative period (>3 months) in 5 patients. Before treatment, the mean serum creatinine level in the 0.6 mg/dL (range, 1.4-3.4 mg/dL) and after treatment, the mean patients was 2.4 0.6 mg/dL (range, 0.9-2.9 mg/dL). All patients' whose serum creatinine level was less than 1.9 were treated successfully except 1. In that patient, a graft nephrectomy was done 17 days after the renal transplant owing to total vascular occlusion of the graft. One patient returned to hemodialysis 3 months after treatment, and a retransplant was done 2 months later. At the time of this writing, the remaining 6.36 patients are alive with good graft function at a mean follow-up of 14.1 months (range, 7-25 months). In conclusion, widespread CD4 deposition in the peritubular capillaries, as demonstrated by renal allograft biopsy, is an important characteristic for diagnosing acute humoral rejection. In the patients studied here, several plasma exchange treatments were effective in resolving acute humoral rejection.

IRANIAN’S BELIEF ABOUT ORGAN DONATION: A GENERAL POPULATION SURVEY

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Organ transplantation science has a history of more than a century. Despite many advances in techniques and care of the patients which led to improvement in survival and quality of life in transplanted patients, it has not reached to its ultimate goal: transplantation of every patient in need. Among the obstacles in the way is the general belief. Organ transplantation is still a taboo among many individuals and societies. We report here ideas regarding organ transplantation from a general population from Iran. In a cross-sectional study, a group of 87 participants were selected from the general population in Tehran, Iran, 2008. The mean age of the participants was 27 ± 9.8 years (range: 19 to 68). 33(37.9%) of participants were male. A questionnaire containing 38 questions which asks about knowledge, attitude and practice of the participants regarding organ transplantation was given to the participants. We describe here the participants’ answers. 89.2% of the participants were willing to donate their own organs. Among those who opposed organ donation, personal believes consisted 88.8% of cases and religious believes were the cause in only 11.2%. 51.8% of the participants believed that a brain dead patient is definitely dead and 9.4% were against this idea. 54.8% of the participants believed that if a person is willing to donate his/her own organs, it should be done regardless of the family’s opinion. We observed that the majority of surveyed Iranian participants support the organ donation. The main reason for opposing the transplantation was personal beliefs.
**P-276**

**IS OVERSEAS KIDNEY TRANSPLANTATION SATISFACTORY?**

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Despite the improvement of results of graft and patient survival in kidney transplantation many aspects of it remains unsolved. Our purpose was to study results of the kidney transplantation in Azerbaijanian patients at the different neighbouring countries. We retrospectively reviewed the clinical outcomes of previously kidney transplanted patients in the outside of Azerbaijan. All patients were under the evaluation at the Med service Medical Centre. We identified 102 patients, who underwent kidney transplantation outside of the Azerbaijan between June, 2000 and July, 2008. All patients were Azerbaijanian citizen. 88 were transplanted in different transplant centres at Iran, 2 were transplanted in Pakistan, 6 were transplanted in Turkey, 6 were transplanted in Russia. All patients had organs from the living donors, while 57 patients were male, 47 patients were female patients. Mean age of the patients were 42 +/-11.3 years .While in 35 patients primary cause of chronic renal failure (CRF) was glomerulonephritis, in 30 patients was pyelonephritis, in 11 patients was diabetes, in 9 patients was hypertonia, remaining 17 patients CRF was unknown aetiology. Induction immunosuppressivetherapywasavailablein56/102patients. Remaining patients’ data is not well documented. Complications were mainly infectious, which 12 patients had got potentially life-threatening one. At last follow-up, mean serum creatinine level was 1.45 +/-0.24 mg/dl, episodes of acute rejection had occurred in 31/102. 12 /102 grafts failed due to acute rejection and 80/102 were alive. In conclusions, kidney function and graft survival were not good after overseas kidney transplantation. Although quality of the overseas transplant centre was main factor, other problems like incomplete preoperative preparation, states of donor organs condition had great impact on postoperative complication and graft survival.

**P-277**

**EXPERIMENTAL BONE DEFECT HEALING WITH BOVINE FETAL GROWTH PLATE AS A NEW XENOGRAFT AND XENOGENIC DEMINERALIZED BONE MATRIX: RADIOLOGICAL, HISTOPATHOLOGICAL AND BIOMECHANICAL EVALUATION**

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The following study was designed to evaluate xenogenic bovine demineralized bone matrix (DBM) and new xenograft (Bovine fetal growth plate) effects on bone healing process. Twenty male White New Zealand rabbits were used in this study. In group I (n=10) the defect was filled by xenogenic DBM and in xenograft group the defect was filled by a segment of bovine fetal growth plate and was fixed by cercelage wire. Radiological, histopathological and biomechanical evaluations were performed blindly and results scored and analyzed statistically. Statistical tests did not support significant differences between two groups radiographically (P> 0.05). There was a significant difference for union at the 28th post operative day radiologically (P<0.05). Xenograft was superior to DBM group at the 28th postoperative day for radiological union (P<0.03). Histopathological and biomechanical evaluation revealed no significant differences between two groups. In conclusion the results of this study indicate that satisfactory healing occurred in rabbit radius defect filled with xenogenic bovine DBM and xenogenic bovine fetal growth plate. Complications were not identified and healing was faster in two grafting groups.
P-278
EPIDEMIOLOGY OF INFECTIOUS COMPLICATIONS AND THEIR IMPACT ON THE OUTCOME OF RENAL TRANSPLANTATION RECIPIENTS

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Infections represent a major cause of morbidity and mortality among renal transplant recipients. We aimed to analyse the epidemiology of infectious complications and their impact on the outcome of renal transplant recipients. We analysed retrospectively 296 adult RT recipients, performed at Charles Nicolle Hospital between 1986 and 2006. Recipients were 194 males and 102 females, whose mean age (±SD) was 31.96 ± 9.4 years (range 16-61 years). The median of the follow-up was 72.6 months. Prophylactic antibiotherapy was used at the time of transplantation and for up to 24 hours postoperatively. One single tablet of TMP-SMX was used during 4 months after transplantation. The patients were divided in 2 groups: G1 with infection and G2 without infection. 244 (82.43%) patients presented at least one episode of infection during the follow-up, urinary tract infection is the most common infection (69.9%). 52 (17.56%) have never presented an infection. G1 and G2 mean age (years) were 31.72 ± 9.42 and 33.11 ± 9.32 (p = 0.33). Female gender 81% ± 18.6% (p = 0.035). Acute rejection 38.1% ± 26.9% (p = 0.003). The causes of death were infectious in 32 cases (58.18%): bacterial in 25 cases, tuberculosis in 2, viral in 4 cases (chickenpox in 2 and CMV in 2) and parasitic in 3 cases (aspergillosis, toxoplasmosis and pneumocystosis, one for each case). The actuarial patients survival rates at 1, 5 and 10 years in the G1 was respectively: 95.8%, 87% and 75.5%, whereas in the G2, was respectively 98%, 94.9% and 94.9%. The differences between the two groups were statistically significant (P = 0.01). The prevalence of infections in our study remains high. Urinary tract infection is the most common infection. In our study, acute rejection and female gender represent the main risk factors for bacterial infection. Infectious complications in renal transplant recipients are still an important issue.

P-279
ASSESSMENT OF BONE DENSITY IN PATIENTS BEFORE AND AFTER KIDNEY TRANSPLANTATION

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Accentuation of bone loss is one of the most important skeletal complications after transplantation. Early diagnosis and treatment of osteopenia and osteoporosis reduce risk of fractures. Of 50 patients that received graft during the research period, 31 of them completed it. They were screened for decreased bone mineral density at baseline, 6 and 12 months after transplantation with dual-energy X-ray absorptiometry (DEXA) of lumbar spine and hip. A total 31 patients [17(55.8%) female and 14(45.2%) male] with end stage renal disease entered the study. The mean age of patients in both genders were 39.67 ± 14.5 years (range: 20-67 years). Replacement therapy in 24 patients (77.4%) was hemodialysis and in 7 patients (22.6%) was peritoneal dialysis. Before transplantation, the mean of T-score in femoral neck and lumbar vertebra were -0.88±1.19 and -0.37±1.12 respectively, and osteopenia was found in 41.9% and 29% in each place. On 6 months after transplantation, the mean of T-score in femoral neck and lumbar vertebra were -1.42±0.95 and -1.41±1.36 respectively. Incidence of osteopenia in each place was 83.9% and 64.5%. We tried to exam them in the first year after transplantation, the mean of T-score in femoral neck was -1.13±1.11 and in lumbar vertebra were -1.29±1.33. After 6 months, bone mass reduction was significant (P<0.05). But there is not significant difference between 6 and 12 months after transplantation (P>0.05). In conclusion, bone loss was highest in first 6 months after transplantation. Thus, treatment is necessary in this period of time.
P-280
EVALUATION OF SERUM TUMOR MARKERS (CEA, AFP, CA125, CA19-9, CA15-3 & PSA) IN KIDNEY TRANSPLANTATION AND HEMODIALYSE PATIENTS

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Serum levels of tumor markers would be altered in patients with kidney transplantation, hemodialysis status and chronic renal failure. Tumor markers are considered as significant diagnostic and prognostic factors in evaluation of various neoplasia. Under normal conditions the levels of these molecules remain low and their metabolism has not been fully clarified. In the present study 27 hemodialysis patients, 27 transplanted patients, and 27 healthy matched individuals have been selected. Their serums were taken and kept in -20°C until the tests would be performed. Then the serum levels of CEA, AFP, CA125, CA19-9, CA15-3 and PSA were measured. There were no significant fluctuations in the level of tumor markers AFP and PSA in the study groups. In hemodialyzed patient group CEA levels exceeding from the normal range in 33% of patients, CA125 in 18.5%, CA19-9 in 18.5%, CA15-3 in 11.1% of patients. In transplanted patients CEA levels exceeding from the normal range in 29.6%, CA125 in 14.8%, CA19-9 in 3.7%, CA15-3 in 3.7% of patient group. The tumor markers would increased in some transplanted or hemodialyzed patients. However, it is difficult to conclude that this augmentation of tumor markers be due to real tumor establishment situation, and seems need alternative method for confirmation any mass development.

P-281
EVALUATION OF RISK FACTORS IN DEVELOPMENT AND PROGRESSION OF DYSLIPIDEMIA IN RENAL TRANSPLANT RECIPIENTS

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Hyperlipidemia, a common metabolic disorder among renal transplant recipients, contributes to the development of post-transplant accelerated coronary artery disease. This study investigates possible effects of certain factors such as age, gender, underlying renal disorder, duration of dialysis before transplant, renal function and immunosuppressive drugs on lipid profile of such patients. Retrospectively the records of 103 renal transplant recipients were evaluated in Sina Hospital in Tehran (Iran) between the years 2004 and 2006; patients’ demographic data, underlying renal disorder and immunosuppressive drugs regimen along with their lipid profile including total cholesterol (TC), triglyceride (TG) and low density lipoprotein (LDL) were recorded. 43(41.7%) patients were female and 60(58.3%) male. The mean age (±SD) was 39.25±13.9 years. The respective pre-versus post-transplantation lipid profile finding were: TC, 158 ±41 mg/dl versus 198±43 mg/dl, P<0.001; TG, 152 ±78 mg/dl versus 195 ±83 mg/dl, P<0.001; LDL, 82 ±33 mg/dl versus 105 ±33 mg/dl, P<0.001. Increased lipid levels were found to be independent of patients’ age, gender, underlying renal disorder, duration of dialysis before transplant, renal function and immunosuppressive drugs regimen. In conclusions, renal transplant recipients are at a high risk of developing hyperlipidemia; therefore, anti-hyperlipidemia medications should be administrated in these patients irrespective of the prescribed immuno-suppressive regimen.
**P-282**

**KIDNEY TRANSPLANT RECIPIENTS WITH GRAFTS FUNCTIONING MORE THAN 10 YEARS: SINGLE CENTER EXPERIENCE IN BAHRAIN**

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The aim is to study the characteristics and the predictors of survival in Bahraini renal transplant recipients with an allograft that functioned for more than 10 years. Sixty three patients underwent renal transplantation between 1979 and 1997. Of these, 37 had functioning allografts for more than 10 yr (range, 10–28). Characteristics of the patients, data on graft survival, and determinants of outcome were obtained by reviewing all medical records. The mean age at the time of transplantation was 30.7±14 years. The donor source was 25 related and the mean age was 30.4±7 years. Thirty three patients received their first graft. Thirty three were cyclosporine (CsA) treated while 4 patients were primarily immunosuppressed by steroids and azathioprine and 21 patients received induction therapy. Acute rejection episodes occurred in 7 patients (58%), out of them 2 experienced two acute rejection episodes. At most recent follow-up (March 2008), the mean serum creatinine was 137±34 mmol/l. A history of cancer was noted in one patient whereas; hypertension was (54%) and diabetes mellitus in 20.5%. We compared the surviving group with the non surviving group at the same time of transplantation and found that the independent determinants of long-term graft survival were incidence of acute rejection episodes and histopathological findings of CAN. We concluded that renal transplantation even in its earliest years and despite the numerous complications have provided 10 or more years of near normal life to patients with end stage renal disease. Patients on CsA-based immunosuppression clearly didn’t show any significant benefit on long-term graft survival than patients on azathioprine and steroids.

**P-283**

**PROVIDING PHARMACEUTICAL CARE FOR PATIENTS UNDERGOING RENAL TRANSPLANTATION**

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Renal transplantation is a novel renal replacement therapy for many who suffer from established kidney disease (EKD). Many of these patients have multiple diseases in addition to EKD, which requires complex medication regimens including immunosuppressive therapy. Involvement of a clinical pharmacist as a member of multidisciplinary team in the management of patients undergoing kidney transplantation has great impact on clinical outcomes. The challenge for renal clinical pharmacist, therefore, is to obtain the right knowledge of the complex drug regimens used by renal transplant patients. The services provided by renal clinical pharmacists comprises individualizing patients immunosuppressive therapy, identifying adverse drug reactions and any other drug therapy problems, enhancing patient compliance, advice on therapeutic drug monitoring, educating other health care members on different aspects of medications. The goal of this presentation is to highlight on the main roles of the renal clinical pharmacist in order to improve quality of care provided to patients with EKD in a nephrology ward at the Royal Hospital in Sultanate of Oman.
P-284
PRESERVING PERINEPHRIC FAT OF TRANSPLANTED KIDNEY AND ITS EFFECTS ON RENAL TRANSPLANTATION

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To see the effects of preserving perinephric fat on graft survival and complication. In this 3 years retrospective study (from March 2005 to 2008) we compared two groups of recipients. Group A (n= 78) whose perinehric fat of transplanted kidney was not observed (but perisinus fat) during transplantation and group B (n=192) whose perinephric fat persevered. Recipients were compared according to presence of acute rejection episodes significant lymphocele formation (which needed intervention) and graft function (serum creatinine level). Among 78 recipients in group A clinical manifestations of acute rejection (at least during the first three months after transplantation) happened in 23 (29%) recipients and in group B was 68(31%). Serum creatinine during the follow up of two groups was nearly the same and no significant difference was observed for lymphocele formation (in group A 8 recipients (10%) and group B 18(9%) respectively. Our results show that preserving or not of perinephric fat of transplanted kidney has no significant effects on graft function and complication such as lymphocele formation.

P-285
ENDOSCOPIC SINUS SURGERY IN THE MANAGEMENT OF SINUS MUCORMYCOSIS AFTER LIVER TRANSPLANTATION- A CASE REPORT

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Mucormycosis of the nose and paranasal sinuses is a rare invasive fungal infection, which often has a very fulminant course and characteristic clinical findings in immunosuppressed patients. Case report: A 20 y/o male patient underwent liver transplantation for treatment of Budd-Chiari syndrome in Shiraz transplant unit. He received whole liver from a deceased donor and the operation was difficult because of complete obstruction of hepatic veins. The patient received intravenous methylprednisolone (replaced with oral prednisolone after 3 days), tacrolimus and mycophenolate mofetil (MMF) for immunosuppression from the first day after the operation. The patient developed signs and symptoms of outflow obstruction of the transplanted liver which was treated successfully by angiographic intervention and discharged 29 days after the operation without any other complications. During 3 weeks after discharge, the patient mistakenly received 100 mg/day oral prednisolone in spite of 10 mg because of similarity in the shape of 5 and 50 mg prednisolone tablets. The patient developed unilateral face pain with high fever, purulent rhinorrhea and toothache and the diagnosis of unilateral fungal pansinusitis confirmed by biopsy. Treatment by intravenous amphotericin, reducing the dose of prednisolone, endoscopic surgical debridement and irrigation of the nose and involved sinuses with amphotericin was successful and the patient became completely asymptomatic after 1 month and in the last follow-up after 1 year. In conclusion, Sinus mucormycosis in a liver transplant patient is a rare and potentially lethal complication. Early diagnosis, aggressive treatment with amphotericin and endoscopic debridement and careful monitoring of the level of immunosuppressive drugs can be helpful in treating these patients and achieve favorable prognosis.
DOES THE KIDNEY'S WEIGHT BEFORE OR AFTER THE WASHING PROCESS INFLUENCE THE POST TRANSPLANTATION CREATININE LEVEL?

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To our knowledge, there are no studies evaluating the influence of the kidney’s weight before and after washing on the outcome of the transplantation. As a result, the present study was designed to evaluate the impact of weight changes following kidney wash on the post transplantation creatinine levels. A total 92 renal transplantations from living donors performed between March 2007 and 2008, in Sina Hospital were evaluated. The patients who experienced rejection or died during the study period were excluded. Demographic, anthropometric data along with laboratory data from donors and recipients were collected in the pre-operative phase. Data about kidney weight both before and after washing were obtained using an electronic digital weighing machine immediately after the donor’s nephrectomy. The recipients were followed for 6 to 12 months and the data on their body weight, serum creatinine levels and the development of CMV infection. During the study period 15 patients were excluded. Both donors and recipients were predominantly males (donor: 80%, recipients: 65%). There was no significant difference between the age, weight and height of recipients and donors. Mean kidney weight before and after washing was 157.5 ± 31.3 and 180.8 ± 33.7 kg, respectively. Warm and cold ischemic time were 4.3 ± 1.5 and 49.8 ± 15.5 minutes, respectively. There was no significant relation between the recipient creatinine level after 6 and 12 months and the donor’s gender, age, weight and height. The kidney’s weight after washing and the cold ischemic time was related to the donor’s weight (p value<0.001, 0.027, respectively). In conclusion, the post transplantation creatinine level is not influenced by either of the donor or recipient demographic characteristic nor the kidney’s weight before or after the washing process.

EVALUATION OF CLINICAL AND LABORATORY FINDINGS OF TB IN KIDNEY TRANSPLANTATION PATIENTS IN BABOL CITY FROM 2001-2007

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Organ transplantation recipient immunosuppressed for preventing organ rejection that can predispose them to develop opportunistic infections like TB. TB Incidence in patients who have received an organ transplant all over the world vary from %0.35 to %15. TB is a very important infection specially in developing countries that accompanies significantly high mortality and morbidity rates in transplanted patients as compared with the normal population. In most cases the clinical and laboratory findings are elusive and misleading which further compromises diagnosis. This study was designed to evaluate the clinical and laboratory manifestations of TB in kidney transplanted patients and give more information to clinicians regarding this issue. This descriptive and analytical study was conducted on TB infected patients with kidney transplantation in Babol from 2001 to 2007 through sampling census method along with assessing the hospital records of 17 patients. All clinical and laboratory findings from records were assessed. Finally all statistical calculations were done with SPSS 11. The 17 patients assessed consisted of 11 females (%64.7) and 6 males (%35). The mean time between kidney transplantation and onset of symptoms was 11.35 months. Proportions of clinical findings are following: fever in 8 patients (%47.1), cough in 10 patients (%58.8). Laboratory findings of patients are followings: leukocytosis in 4 patients (%23.5), leucopenia in 4 patients (%23.5) increased ESR in 16 patients (% 94.1), CRP in 12 patients (%70.6), in anemia in 15 patients (%88.2) and thrombocytopenia in 2 patients (%2.8). Results of diagnostic tests assessment are as follows: positive PPD prior to transplantation in 4 patients (%23.5), positive smear staining in 14 patients (%82.4) and positive culture in 8 patients (%47.1). In assessing antiviral antibiotics, only one patient was positive for HCV Ab and 10 patients for CMV Ab. HIV testing with ELISA and HBS Ag all were negative. There was no statistically significant difference between smear and clinical findings. In conclusion, TB is a common problem in kidney transplanted patients and its early diagnosis can lead to successfully treatment. In previous studies the mean interval between kidney transplantation and developing of TB infection had been one year that confirms our results. With TB the patients’ prognosis chemotherapy prophylaxis is recommended in high risk patients and several therapy regimens had been suggested.
Pre and post-renal transplantation high soluble CD30 (sCD30), a marker for T helper 2-type cytokine-producing T cells, is a relevant predictor for development of rejection episodes and may contribute further to the selection of appropriate immunosuppressive regimens in high risk recipients. In this study we intended to evaluate the accuracy of serial sCD30 post-transplantation as a predictor for acute rejection versus other markers which affect graft outcome over one year. Fifty renal transplant recipients were randomly selected to check sCD 30 at day 0, 3, 5, 7, 14, 21, 1 month, 3 months, 6 months and 12 months post-transplantation. Results were analyzed for development of acute rejection, (Acute Tubular Necrosis) ATN or other pathology and graft outcome at one year. Compared with pre-transplantation sCD30, there was significant reduction of the average sCD30 immediately post-transplantation from day 3 onwards (p<0.0001). One graft was lost due to renal vein thrombosis immediately post transplantation. Patients were divided into four groups: 1- Uncomplicated course (56%), 2- Acute rejection (18%), 3- ATN (16%) and 4- Other diagnoses (10%). There was significant reduction of sCD30 immediately post-transplantation for group 1, 2 and 3(p <0.0001, 0.004 and 0.002 respectively) but not group 4 (p 0.387). Patients who developed acute rejection after one month had higher pre-transplantation sCD30 value than others who had rejection before one month (p 0.019) with odds ratio 1.649 for the graft loss. All groups had significant improvement of graft function over one year of follow up without significant difference between them. Conclusion: Though significant drop of sCD30 post-transplantation is recorded, measuring sCD30 serially post-transplantation didn’t help to differentiate between acute rejection, ATN and other diagnoses. In this study, higher sCD30 levels pre-transplantation were reported in patients who developed rejection episodes later than one month of transplantation.

New onset diabetes after transplantation (NODAT) is a frequent and serious complication after organ transplantation. Its ethiopathogenesis is complex, with interaction between intrinsic factors (older age, body mass index, individual and family history, hepatitis C virus infection) and graft related factors (immunosuppressive regimen, HLA status). NODAT is associated with an adverse effect upon patient survival, with an increased incidence of infectious and cardiovascular complications. This study aimed at identifying risk factors for the development of NODAT and its effect on premature aterosclerosis. An observational study of 227 patients with a mean age of 42.2 years (61.1% were men); all were receiving cyclosporine and steroids and MMF. Data collected on a routine visit 1-24 months after kidney transplantation. Diabetes was defined according to ADA/WHO guidelines. The carotid intimae-media thickness (CIMT) of diabetic patients were compared with age & sex matched non diabetic post RTX patients and compared with baseline. NODM developed in 15% after a median interval of 1.6 months. Risk factors for the development of NODAT were older age(p < 0.01), heavier weight at time of transplantation (p < 0.01) and time of diabetes onset, higher plasma glucose within the first seven d post-transplant (p < 0.01) and use of high dose of steroids and CMV infection were risk factors of NODAT. There was a significant deference between CIMT of NODAT patients and non diabetics, p<0.001 . Conclusion: NODM is associated with certain RFs and CIMT in renal transplant recipients.
Ramadan is the month during which Muslims have to abstain from eating and drinking from dawn until dusk. According to Islamic Laws, children, sick patients, travelers, and women who are menstruating or nursing a baby are exempt from fasting. However, not all Muslims who are ill seek this exemption and insist on fasting in any case. The effect of fasting during the month of Ramadan on patients with renal impairment is still a matter of controversy. Therefore, the present study was initiated to determine whether fasting in Ramadan has harmful effects in renal recipients with mild to moderate impaired allograft function. We conducted a retrospective study on 16 kidney recipients with mild to moderate impaired renal allograft function (calculated glomerular filtration rate lower than 60 ml/min) who had fasted during Ramadan within September to October 2007. Recorded data for each patient before and after the month of fasting were body weight, body mass index, blood pressure, as well as urinalysis, and serum levels of blood urea nitrogen, creatinine, uric acid, blood glucose, electrolytes, lipids, and hemoglobin. The mean age was 45.7 ± 14.5 years, ranged from 21-74 years. There was no significant change in creatinine clearances (the mean values before Ramadan was 47.8 ± 11.2 ml/min vs. 49.7 ± 12.7 ml/min after the month of Ramadan, P=NS). Blood pressure was not significantly lowered after the month of fasting (SBP 131 ± 13 mmHg vs. 128 ± 11 mmHg, P = 0.08; DBP 80 ± 5 mmHg vs. 79 ± 6 mmHg, P=0.4). We did not find an increase of acute complication, acute rejection or ATN, during Ramadan. To our knowledge, this is the first report of impact of Ramadan fasting on kidney allograft in recipients with mild to moderate renal failure from Iran. Our study demonstrated that allograft function in kidney recipients was unaltered by Ramadan fasting. Transplant recipients must consult their doctor for the type and dosage of medicine, and diet and precautions to be taken during the month.
Aspergillosis is one of the most important opportunistic infections after organ transplantation. Early diagnosis and initiation of appropriate antifungal therapy are key factors for better prognosis. In this study, we report our experience with invasive pulmonary Aspergillus infections in Lung, heart and kidney transplant recipients, in our institution and examine the risk factors associated with this complication and outcome of treatment. Methods. We reviewed the medical records of patients with solid organ transplantation with evidence of Aspergillus infections in National Research Institute of Tuberculosis and Lung Disease in Iran from December 2001 to January 2008 and evaluated patient’s demographics, the time of onset after transplantation, risk factors, radiologic appearance, diagnostic criteria, antifungal therapy and outcome. Results. We found Aspergillosis in eight lung, three kidney and one heart recipients, with a mean age of 40.6 years. Seven cases of Aspergillus tracheobronchitis were diagnosed in lung transplant recipients, all of them in the first six months after transplantation. All patients responded to antifungal therapy and Bronchoscopic debridement. We found five cases of invasive pulmonary Aspergillosis. Three of these patients survived with response to antifungal treatment. Two patients who died had been treated with combination of Itraconazole and Amphotericin B. All cured patients had been treated with Voriconazole alone or in combination with Caspofungin. In conclusion, It seems that the prognosis of Aspergillosis in solid organ recipients is improving with new treatment regimens particularly if they are used in early stages of infection.
P-294

URETERAL COMPLICATION AFTER LIVING UNRELATED KIDNEY TRANSPLANTATION: A REVIEW OF 2609 CASES

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Ureteral complications following renal transplantation are associated with major morbidity and prolonged hospital stay and frequently require a second surgical procedure. Our purpose was to investigate the incidence, pathogenesis, diagnostic procedures and management of ureteral complications after living unrelated kidney transplantation. To address these topics, we retrospectively analyzed our experience with renal transplantation in this population between January 1991 and January 2007. The median follow-up time was 2.5 (range: 1 to 96) months. Ureteral complications were noted in 29 of the 2609 transplantations including 24 men and 5 women. All of the patients received a kidney from living unrelated donors who had undergone transplantation for the first time. The mean age of recipients was 44.8 ± 12.7 (range 18-69) years. The mean body mass index (BMI) was 25.6±5.2 (range: 20.4 - 34.2) kg/m². Interestingly, the most common cause of end stage renal disease in our patients was hypertension (37.8%), followed by diabetes mellitus (24.1%). None had undergone previous urological surgery. The mean warm and cold ischemic times were 17±2 second and 19±3 minuets, respectively. Twenty of cases only had one complication and 9 had more than one. The overall incidence of ureteral complications among transplant recipients was 1.1 percent; including urinary leakage (82.5%), ureteric strictures (20.7%), ureterovesical junction obstruction (10.3%), early ureteral necrosis (6.9%), ureteropelvic junction obstruction (3.4) and ureteral fistula (3.4%). In most patients with urinary leakage, the problem was improved with insertion of folly catheter. Double-J stent was only required in 2 cases. Six patients (20.7%) with elevated serum creatinine which had ureteral obstruction or stenosis underwent nephrostomy. Surgical site infection was seen in one patient as well as incisional hernia in another case. Although reoperation was required in 5 cases, but renal allograft loss was not seen in our study. Ultrasonography was the most common method used for diagnosis of ureteral complications. Our study showed that ureteral complications were rare problems after kidney transplantation. However, early diagnosis and prompt correction are mandatory to prevent graft loss and morbidity of recipient, especially if these complications are associated with infection.

P-295

MUCORMYCOSIS IN KIDNEY TRANSPLANT RECIPIENTS: AN EMERGING FUNGAL INFECTION


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Mucormycosis is a rare and often fatal opportunistic fungal infection following organ transplantation. We report our experience of clinical findings, diagnostic procedures, treatment and outcome of Mucormycosis diagnosed in renal transplant recipients admitted to 6 transplant centers. From 2000 to 2008 we observed 15 cases of Mucormycosis, 10 male and 5 female. Their mean age was 48±11 (ranged from 25 to 67) years and the median time of diagnosis since transplantation was 15 (1-72) months. Diagnosis was made by radiological findings, positive cultures (blood, nasal swabs and bronchoalveolar lavage) and tissue biopsies. Rhino-cerebral mucormycosis was the most common form of the disease (n=8, 53.3%) and followed by lung involvement (n=4, 26.6%), skin lesion (n=2, 13.3%) and disseminated infection (n=1, 6.6%). Immunosuppressive regimen in all patients was cyclosporine based; 9 and 4 recipients received mycophenolate mofetil and azathioprine, respectively. Patients with mucormycosis did not experience more graft loss. Immunosuppression and diabetes (n=6) were major factors predisposing to mucormycosis in renal transplant patients. Aggressive surgical debridement was employed in 10 cases and amphotericin B was administrated in all patients, death occurred in 8 (53.3%) patients. Mucormycosis is a devastating, rapidly progressive and often fatal infection following kidney transplantation, although patients with limited rhino-cerebral disease may have a better prognosis, especially with early diagnosis and aggressive surgical debridement and antifungal therapy.
P-296
THE PREVALENCE OF BOWEL CONTAMINATION WITH PARASITES AND FUNGI IN IRANIAN KIDNEY TRANSPLANT RECEPIENTS

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Kidney transplant recipients routinely use immunosuppressives and are susceptible to a variety of infections. Data on the prevalence of parasitic and fungal bowel contaminations in Iranian transplant recipients are limited. This study was conducted to address the issue in a controlled cross-sectional study. A total of 150 kidney transplant recipients and 225 outpatient controls referred to the central laboratory of transplantation were enrolled. Stool sample was obtained from all participants and direct examination, concentration, color-blending and cultures were performed using standard methods. The prevalence of bowel contamination with parasites and fungi in transplant recipients were 33.3% and 58.7%, and in healthy controls were 20.0% and 51.1%, respectively (p>0.05). Entamoeba Coli was the most common parasitic contamination with an estimated prevalence of 9.3% in transplant and 6.7% in control groups. Candida species were the most prevalent fungal contaminations and were found in 22.0% of transplant patients and 24.4% of healthy controls. Co-infection with two or more fungi was observed in 14.8% of transplant patients and 3.4% of controls (p<0.001). In conclusion, although the prevalence of parasitic and fungal contaminations were comparable in two groups, high contamination rate especially co-infection with multiple fungi in transplant recipients warrants for pretreatment evaluation of these patients. However, the pathogenicity of these contaminations needs further assessments.

P-297
A RENAL TRANSPLANT PATIENT WITH FUNGAL SINUSITIS

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A 52-year old woman was admitted to the hospital because of headache, blurring of vision and fever. She had a history of living unrelated renal transplantation 6 years ago. Her immunosuppressive drugs consist of cyclosporine and prednisolone. There is no episode of rejection or immunosuppressive intensification for the last two years. There was history of post transplant Diabetes Mellitus since 5 years ago that was controlled with insulin. Physical examination on admission was a low grade fever, periorbital edema and erythema and chemosis and tenderness of maxillary bone suggesting orbital cellulitis. CT scan of sinuses and orbit disclosed sinusitis and soft tissue infiltration and edema and destruction of anterior bony wall of right maxillary sinus. Deep orbital structures were intact in first CT scan. Brain CT scan was normal. The presentation of patient progressed despite antibiotic therapy and a red tender nodule below the right eye appeared. Immunosuppressive drugs except prednisolone were discontinued. In examinations of nasal mucosa by nasal endoscope, there was severe erythematous and fragile bleeding mucosa. Biopsy was taken from inferior turbinate and septal mucosa. The pathologic results were nonspecific inflammation. The right eye became fixed within the orbit and there was near complete loss of vision and the patient admitted to ICU due to respiratory distress on third day of hospitalization. Another attempt to obtain tissue was done by sublabial Caldwell incision. Sinus mucosa and skin granulation tissue were sent to pathology. Drainage was established by inferior entrostomy. The pathologic review of specimens disclosed invasion by nonseptate hyphae fungi that was compatible with invasive mucormycosis. Amphotericin B was administered with a rapid escalating dose to 1.2 mg/kg and radical surgery was planned. The patient was not compliant with evacuation of orbit. Radical debridement was performed by Weber Fergusson incision and lip splitting. By extending the incision to lateral canthus, skin flap was elevated. Anterior bony wall of Maxilla excised up to inferior rim of orbit where the bone seems uninvolved. Involved skin with safe margins was excised and repair was performed by flap advancement of skin from neck and forehead. Despite surgical debridement and continued amphotericin B with doses more than 1mg/kg for more than 5 weeks, the disease progressed. Her allograft function remained stable with a serum creatinine around 1.6 mg/dl despite discontinued immunosuppressive drugs and administration of more than 2 gram amphotericin B. The patient refused more extensive surgical excisions and left the hospital for a more peaceful death. Teaching point: By reviewing the literature, a dozen of mucormycosis were found in renal transplant patients. Rhinocerebral and other forms of mucormycosis must be considered in immunosuppressed especially diabetics that warrants early and extensive surgical excisions.
P-298
ANESTHESIA FOR LUNG TRANSPLANTATION; A 5 YEAR EXPERIENCE

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Lung transplantation has become an effective therapeutic option in patients with end stage lung disease. Patients undergoing lung transplantation present a variety of challenges to the anesthesia team. This retrospective study describes anesthesia management in patients underwent lung transplantation during a 5 year period in Dr. Masih Daneshvari Hospital, Tehran, Iran. There were 16 patients of lung transplant recipient from June 2003 to April 2008. Of them 13 patients underwent single lung transplantation (SLT) (8 fibrosis, 1 pulmonary alveolar microlithiasis, 1 scleroderma, 2 emphysema, and 1 silicosis) and 3 bilateral sequential lung transplantation (DLT) (2 bronchiectasis and 1 emphysema). Anesthesia was induced with sodium thiopental or fentanyl and midazolam and atracurium or cisatracurium were used for muscle relaxation. Anesthesia was maintained with isoflurane or propofol and remifentanil continuous infusion in O2 100% (8 cases received total intravenous anesthesia and 8 balanced anesthesia techniques). Systemic arterial pressure, arterial blood gases and central venous pressures were monitored throughout the surgery, along with inspired and expired gases and airway pressure. Lung isolation was accomplished by using Robertshaw double lumen endotracheal tube. Nitroglycerin (TNG), prostaglandin E1, dopamine, dobutamine, epinephrine, and norepinephrine were used for hemodynamic management. The patients received mechanical ventilation, immunosuppressive drugs, antibacterial prophylaxis, and prevention of reperfusion injury in the ICU postoperatively. Recipients were 11 male and 5 female with a mean age of 38.5 ± 13 yrs. In 4 cases (2 SLT and 2 DLT) cardiopulmonary bypass was used because of hemodynamic instability and hypoxemia. Permissive hypercapnia was used in 10 cases. Intraoperative death was observed in one patient due to technical difficulty of surgical procedure. The average extubation time was 34.86 ± 17 hours after surgery. It is hoped that lung transplantation will be made available to a greater number of patients with end stage pulmonary disease in Iran. Continued advancements in perioperative monitoring, pulmonary vasodilators and technical considerations improve perioperative anesthetic management of lung transplantation.

P-299
MODIFIED ANTERIOR ABDOMINAL DONOR NEPHRECTOMY IS SAFE AND COMPARABLE WITH LAPAROSCOPIC DONOR NEPHRECTOMY

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Kidney transplantation is the best option for treatment of chronic renal failure because quality of life in this treatment is good and also it is cost beneficial. The main problem with it is donor shortage. Recently with the introduction of the laparoscopic procedure for nephrectomy it was assumed that live donor will be increased because the laparoscopic incision is small and the time of hospitalization is short, but the long warm ischemic time and effect of this on long time survival of graft is a challenge. Here we introduce a modified anterior abdomen incision for donor nephrectomy with advantages of the laparoscopic approach but with short warm ischemia and operating time. In fifteen donors after flank positioning, an incision in the upper side of abdomen between the rectus and the tip of the ribs was carried out (very small incision about 10 cm) kidney was exposed and after skeltonizing kidney and ureter, nephrectomy done. Wall of abdomen after lidocaine infiltration in wound was repaired with plastic sutures. With this small incision and plastic repairmen without drain and rib resection the patients were discharged after two days post operation with lesser pain compared with our previous experiences. Modified anterior abdomen incision is safe and comparable with the laparoscopic procedure and it may be advised in centers where laparoscopic operation is not possible.
P-300

RENAL TRANSPLANTATION IN PATIENTS YOUNGER THAN 18 YEARS OLD

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Chronic dialysis and renal transplantation are both satisfactory treatment for end-stage renal disease (ESRD). Successful renal transplantation remains the primary goal for children with ESRD. In this study we reported our experience with renal transplantation in patients younger than 18 years in our pediatric nephrology center. We enrolled all children managed for ESRD and received renal transplantation during 9 years period (1376-1385) in our hemodialysis center. The diagnosis of ESRD was based on clinical, laboratory and radiological findings. The demographic characteristics of patients and graft survivals were collected and reported. Forty-four renal transplants were performed in patients less than 18 years of age in this period. 27 (61%) were boys and 17 (48%) were girls. The mean age at transplantation was 12.3±1.1 years. Twenty-seven (61%) were from living donors (81% unrelated, and seven (39%) were from cadavric donors. The main etiology for end-stage renal disease was neuropathic/vesicoureteral reflux in 38% of the children, followed by glomerulopathy in 13.6%, nephrolithiasis 11% and polycystic kidney 6.8%. The rate of graft losses was 16% (3 patients with living unrelated donors, 2 with living related and 2 with cadavric donors) and the mean age of patients for graft failure was 8.4 years. The etiology of ESRD in patients with graft losses were; nephrolithiasis due to hyperoxaloria (3), neuropathic VUR (3) and Alport syndrome (1). These findings suggest that the graft survival of living unrelated donor renal transplantation in recipients is the same as cadaver donor renal transplantation. Furthermore, the main factors for the graft losses were younger age and causative disease.

P-301

HYPERURICEMIA IN PEDIATRIC KIDNEY TRANSPLANT RECIPIENTS

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Despite dramatic improvement in pre-transplant metabolic abnormalities following successful kidney transplantation, uric acid metabolism is interfered by cyclosporine and hyperuricemia is commonly encountered in post-transplantation era. In a cross sectional study serum uric acid level was assessed in the latest referral of all children who had been transplanted in our center and had regular pediatric nephrologist follow up. Hyperuricemia was defined as serum uric acid level>6mg/dl or allopurinol consumption by the recipient. To remove the effect of allograft dysfunction on the serum uric acid level only children with serum creatinine <1.5mg/dl enrolled in this study. SPSS15.1 Soft wear were used for statistical analysis. One hundred and thirty eight out of 216 children ≤19 years at the time of transplantation who was followed by pediatric nephrologist, were involved in this study. There were 79 (57.2%) boys and age at Tx was 3-19 years with a Mean±/SD of (13.6+/3.5) and minimum weight of 10 kg. Donor ages were 1 to 52 years with a mean of (24.6+/12.5) with 41 parents, 9 siblings and other relatives, 67 deceased and 21 unrelated. Their Primary renal diseases consisted of glomerular diseases, hereditary diseases, reflux-obstruction dysplasia, stone and unknown in 26(19%), 47(34%), 58(42%), 2(1.5%) and 5(3.5%) respectively. The mode of dialysis before transplantation was hemodialysis in the majority of our cases (85.5%), followed by preemptive transplantation (12.1%). One hundred and thirteen had functioning grafts and in 88 of them serum creatinine were ≤1.5mg/dl. Forty three (48.8%) of the children had either serum uric acid >6mg/dl or they were on allopurinol for their Hyperuricemia. There were 49 male and 39 female with 27(45.8%) and 16(41%) hyperuricemic respectively. Long term survivors were more hyperuricemic so that in children with a 3, 4-6 and >6 years of follow up prevalence of Hyperuricemia was 16.6,51 and 56% respectively. In conclusion, hyperuricemia is quite common following pediatric Kidney transplantation and long term survivors are more hyperuricemic.
P-302
BK VIRUS NEPHROPATHY IN PEDIATRIC RENAL TRANSPLANTATION: A SINGLE CENTER EXPERIENCE IN 325 CASES
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Viral infections are a well known complication in transplant recipients. BK Virus (BKV) belong to the polyomavirus family of double stranded non-enveloped DNA viruses. BK nephropathy is an important cause of renal transplant dysfunction, especially in patients with high levels of immunosuppression. Up to 85 percent of adults have reportedly serologic evidence of exposure to the virus, suggesting the presence of asymptomatic, latent infection. Between January 1985 and August 2008, 325 kidney transplantations were performed in children under 15 years of age. Immunosuppressive medications consists of prednisolone, Cyclosporin A and Mycophenolate Mofetil. BK Virus was detected in urine of 103 of these patients who were in regular follow-up by Polymerase Chain Reaction (PCR) and in blood if patient was symptomatic. Decoy cells were also tested in symptomatic patients. Herein we present our experience in BK Virus Nephropathy in renal transplant children in Labbafinejad Hospital. BK Virus particles were detected in urine of 14 transplant children of whom 3 patients had Decoy cells in pathologic examination of urine and a dramatic rise in plasma creatinine. PCR examination of blood for BK Virus was positive in only one of these patients. Immunosuppressive medications were reduced as first step of treatment but was effective in 2 patients presenting with reduction of creatinine. Cidofovir was used for third patient which was partially effective leaving a plasma creatinine of 1.9 mg/dl. BK Virus Nephropathy should be considered as a cause of each allograft dysfunction in transplant children.

P-303
CAN MAIN RENAL ARTERY DOPPLER ULTRASONOGRAPHIC INDICES PREDICT THE PRESENCE OF THE SUPERNUMERARY RENAL ARTERY?
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Variations of the renal artery including the presence of the supernumerary renal artery are considered critical issues for renal transplant, and surgeons should have a thorough knowledge about them. Angiography has been a gold standard test for pre-transplant evaluation of the renal vasculature; however, this modality is both expensive and invasive. The aim of this study was to assess whether the main renal artery Doppler ultrasonographic (DU) indices can predict the presence of supernumerary renal arteries. Retrospectively, we collected the angiography and DU findings of 30 healthy potential renal transplant donor from October 2004 to July 2008. All patients underwent the renal Doppler ultrasonography (DU) and multi-detector CT angiography (CTA) before donor nephrectomy. DUS indices including peak systolic volume (PSV), resistive index (RI), pulsatility index (PI), end-diastolic volume (EDV) and acceleration time (AT) were recorded. The data were analyzed by SPSS for Windows version 12.0. Receiver operator characteristic (ROC) curves were used to examine the predictive values of DU indices for the supernumerary renal arteries. All data are presented as mean values +/- SD. Results: The mean age of donors was 28.4 +/- 4.1 years. The mean PSV, RI, PI, EDV and AT were 31.63 +/- 10.15, 0.59 +/- 0.05, 1.05 +/- 0.19, 12.79 +/- 4.82 and 50.21 +/- 14.39, respectively. Of 60 kidneys evaluated, a supernumerary renal artery was found in 10 % of cases. The ROC curve analysis revealed an area under the curve of non-informative (below 0.5) for all DU parameters indicating that none of the studied parameters could predict the presence of supernumerary renal artery. In conclusion, although a smaller diameter of the main renal artery has previously been found to predict the presence of supernumerary renal artery, the present study revealed that the main renal artery DU indices may not indicate the presence of supernumerary renal artery.
P-304
HYALOHYPOMYSOSIS CAUSED BY PAECILOMYCES LILACINUS AFTER KIDNEY TRANSPLANTATION.

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Hyalohyphomycosis caused by Paecilomyces has rarely been described in solid organ recipients. Its management is elusive without established consensus concerning antifungal therapy. We report a new case of extensive cellulites caused by Paecilomyces lilacinus (PL) observed in a 48-year-old kidney transplant women. Kidney transplantation (KT) was performed in October 2006 from a cadaver donor with an uneventful early course except of post transplant diabetes mellitus. Cutaneous nodular and verrucous lesions of the left leg appeared in August 2007. In a few days, these lesions become ulcerative, hemorrhagic and very painful. The diagnosis was made on the basis of the findings of microbiological culture and histopathological examination. There was no improvement of skin lesions after 6 weeks of treatment with itraconazole. Whereas, voriconazole resulted in a good response within the first 2 weeks. We proceeded to a substantial reduction of tacrolimus and to the stop of mycophenolate mofetil. There was a good tolerance of antifungal therapy; especially graft function and liver tests remained normal knowing that our patient has C hepatitis. Literature review of published cases of fungal infection caused by PL after KT revealed that skin represents the most involved site. Other localizations were also described including eyes, sinus and heart. In vitro sensitivity of LL to the azole antifungal drugs has been often reported but the clinical response remains inconsistent with frequent recurrence. We conclude that an increasingly emerging of fungus infections is observed with the introduction of new more powerful immunosuppressive drugs. Diagnosis and management of such infections is elusive. Preventive measures should be considered including the adaptation of immunosuppressive therapy in patients at risk especially those with HVC infection.

P-305
VACCINATION EFFICACY IN TRANSPLANT RECIPIENTS COMPARING HEMODIALYSIS PATIENTS

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Infection with all types of pathogens including Streptococcus Pneumoniae is a common complication for immunocompromised patients e.g. hemodialysis patients and recipients of solid organ allograft, and causes significant morbidity and mortality among these patient populations. The objectives of this study were: to assess and compare the antibody responses of renal allograft recipients and dialysis patients to pneumococcal vaccination. 14 stable dialysis patients as well as 37 kidney transplant recipients were eligible for inclusion in this trial. Participated patients receive a single 0.5-mL of 23-valent vaccine Pneumovax® administered subcutaneously in the upper extremities. The efficacy of vaccination was evaluated by measuring the antibody response to the whole vaccine. Serawereobtained prior to vaccination and 4 weeks, 6 months and 1 year after the vaccination. Prior to vaccination, mean IgG and IgG2 titers were equivalent in Dx and KTx patients (p>0.1 in both). Four weeks after vaccination, 49 out of 51 participated patients (96%) represented an increase in their anti pneumococcal IgG levels (mean 99±) compared to 48 out of 51 (94%) for month 6 (mean 90±59), and 38 out of 45 (85%) for the first year after vaccination (mean 73±69). KTx patients kept significantly more serum IgG2 levels at months 6 and 12 after vaccination (p=0.001, p=0.03, respectively; table 1). Mean IgG values for month 6 was 9 ± 41 units lesser than month 1 post vaccination serum IgG levels. We found that patients with renal failure on hemodialysis and kidney transplantation well respond to immunization by anti pneumococcal vaccination. But, they rapidly lose their serum antibody levels during the first year after transplantation. Specifying protective levels for serum IgG and IgG2 levels in these patients would help us to more precisely follow these patients and to consider a revaccination when they failed to save the protective serum antibody level.
P-306
METABOLIC SYNDROME IS RELATED TO LONG-TERM GRAFT FUNCTION IN RENAL TRANSPLANT RECIPIENTS
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Metabolic syndrome (MS) is a known cardiovascular risk factor in the general population and is a common problem in renal transplant recipients (RTRs). This study investigated whether MS after renal transplantation affects long-term graft function. We included 112 RTRs who were transplanted at our center between 2000 and 2002. Patients with presence of pretransplant diabetes, non-stable renal function 1 year after transplantation were excluded. The parameters such as demographic features, medications, smoking, body mass index, daily proteinuria, blood pressure, number of HLA mismatches, number of acute rejection episodes, delayed graft function and laboratory parameters were evaluated. Patients were followed for a mean of 69.86 ± 21.94 months. The prevalence of MS was determined using the National Cholesterol Education Program-Adult Treatment Panel III (NCEP-ATP III) criteria. At one year after transplant 28.6% of RTRs had MS, whereas only 10.7 had MS before transplantation. In 27.7% of RTRs graft failure was occurred during the follow-up period and MS was more frequent in these patients compared to patients with stable renal function (51.6% vs. 19.8%, P= 0.002). Older donor age, delayed graft function, acute rejection, smoking, MS, proteinuria, creatinine level and C-reactive protein were associated with graft failure. In multivariate Cox regression analysis, patients with MS at 1 year after transplant had increased risk for graft failure (RR: 0.22; 95% CI: 0.06-0.75; P= 0.016). Older donor age and proteinuria level were other independent risk factors for graft failure. Metabolic syndrome is a prominent risk factor for graft failure in RTRs. Because MS is a cluster of modifiable risk factors, early identification of patients at risk an intervention in due time may improve graft survival.

P-307
APOPTOSIS AND PROLIFERATION OF CARDIOMYOCYTES AND MONONUCLEAR INFILTRATES IN CARDIAC ALLOGRAFTS: ASSOCIATION WITH REJECTION AND MACROPHAGE INFILTRATION
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Previous studies have noted that acute rejection (AR) may lead to loss of cardiomyocytes in transplanted hearts. The aim of this study was twofold; first to assess the degree of apoptotic cells and to compute the proliferation index of cardiomyocytes and mononuclear interstitial infiltrates in cardiac allografts; second to determine whether apoptosis is involved in acute rejection. Total 28 endomyocardial biopsies were included in to the study. Of 28 biopsies, 18 showed AR and remaining 10 biopsies showed nonspecific changes which they were used as a control group. All biopsies were immunostained with Ki-67 and CD68 antibodies. Apoptotic cells were detected and counted in all biopsies by the TUNEL method. Apoptotic cell death of cardiac myocytes and interstitial cells were significantly higher in cases with allograft rejection compared to control group (p<0.05). In addition compared to control group AR cases showed higher degree of proliferation index of cardiac myocytes and interstitial cells (p<0.05). Macrophage infiltration was significantly higher in AR cases and macrophage infiltration shows linear association with both apoptosis and proliferation of myocytes and interstitial cells (p<0.001). In conclusion we verified the presence of apoptotic cell death during acute rejection in heart transplants. The apoptotic cell death was significant on interstitial cells but it was slighter in cardiac myocytes and macrophage infiltration has a great influence on apoptotic cell death of myocytes and interstitial cells.
P-308
VARICOCELE DEVELOPMENT FOLLOWING LEFT SIDE NEPHRECTOMY IN KIDNEY DONORS

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Most of kidney transplanting surgeons tend to perform a left sided nephrectomy for donation and as demonstrated by anatomists, one of veins joints to left renal vein is left testicular vein which its flow may be damaged by manipulation of left renal vein during left nephrectomy. We aimed to evaluate changes of left side pampiniform veins plexus and testis following left side nephrectomy in kidney donors. During present cross-sectional study (Sep 2007-July 2008), 54 healthy males who candidate for left kidney donation underwent ultrasound study of left side pampiniform veins plexus diameter and left testis size before and 4 months after nephrectomy. Mean age of patients was 25.07 ± 2.49 years. The mean diameter of left pampiniform vein diameter before and 4 months after nephrectomy were 1.37 ± 0.40 and 2.04 ± 0.49 mm, respectively, and the mean size of left testis before and 3 months after nephrectomy were 21.86 ± 2.47 and 21.50 ± 2.17 cc, respectively. The mean of left pampiniform vein diameter was significantly increased 3 months after nephrectomy (P<0.001), but the mean size of left testis was not significantly changed (P=0.136). In conclusion, 4 month after left side nephrectomy, left side pampiniform vein plexus diameter increased, while there was not significant change in left testis size. Therefore, patients with left side nephrectomy may be proposed to the high risk of varicocele.

P-309
INFECTION WITH CYTOMEGALOVIRUS IN RENAL TRANSPLANT PATIENTS

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Cytomegalovirus (CMV) is considered the most important infectious cause of mortality and morbidity in organ transplant recipients. In this study, we report the impact of CMV infection on the outcomes of renal allograft recipients in our renal transplant population. A retrospective approach was used to analyze data of renal transplant recipients undergoing the procedure at Baqiyatallah Hospital in Tehran, Iran, between 1984 and 2007. Overall, 48 patients (2.1%) were documented as developing CMV disease. 1 patient (2%) died, and 3 (6%) lost their allograft function. Compared to MMF based immunosuppression, azathioprine is less likely to induce CMV disease and also promises better survival (P < .0001 & P<0.001). Being negative for the anti-CMV IgG antibody and receiving an allograft from a positive donor was also associated with CMV disease development and worse patients survival (P = .03 & p<0.0001). This study showed that CMV infection induces unfavorable outcomes in renal allograft recipients, especially when the infection occurs early on in the posttransplant phase. We suggest to closely monitor CMV positive patients and to use less-intensive immunosuppressive treatment. Future prospective studies seem necessary.
**P-310**

**LIVE OR DECEASED DONOR KIDNEY TRANSPLANTATION: A COMPARISON OF RESULTS AND SURVIVAL RATES AMONG IRANIAN PATIENTS**

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Kidney transplantation is the selective and final treatment of end stage renal failure. For years, live donor kidney transplantation was the only choice but increasing demands and advances in the field of transplantation made the possibility of deceased donor transplantation. Despite the advances in the recent years, deceased donor kidney transplantation is not that much favorable. The aim of this study was to investigate and compare the results and survival rates of kidney transplantation among live and deceased donor ones. To reach the aim of this study, the files of patients who had received a kidney transplant at Shariati Hospital in Tehran, Iran, were reviewed and 50 deceased donor kidney transplant patients (group I) were compared with 50 live donor kidney transplant patients (group II). The patients were matched in each group by the time of transplantation. Gathering the data, a questionnaire was used for each of the patients and finally T and Fisher’s Tests were used to analyze the data by means of the SPSS Software version 15. There were 28 males and 22 females with a mean age of 38 ± 13 years in group I while 26 males and 24 females contained group II with a mean age of 34 ± 14 years. The rejection and graft nephrectomy rates were significantly higher in group I than group II (P=0.01, P=0.02). The first year graft tissue survival rate was higher in group II (P=0.001). The graft tissue survival was significantly lower in patients who needed a kidney biopsy and/or dialysis than other patients (P<0.006). On the other side, the graft tissue survival rate was significantly higher in patients who had a urination volume more than 4200 ml within the first 24 hours of transplantation (P<0.003). There wasn’t any statistically significant difference between the survival rates of patients in the two groups. In conclusion, due to the increasing need of kidney transplantation, comprehensive planning for public education about deceased donor kidney transplantation and introducing the benefits of this kind of transplantation seems necessary.

**P-311**

**IMPACT OF SLOW AND DELAYED GRAFT FUNCTION ON KIDNEY GRAFT SURVIVAL BETWEEN VARIOUS SUBGROUPS AMONG RENAL TRANSPLANT PATIENTS**

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Renal allografts with excellent graft function have good long-term outcomes; while grafts with delayed function have been associated with an increased incidence of acute rejection (AR) and subsequent poor long-term graft survival, although few reports have analyzed outcomes in these groups. We compared first week postoperative graft function between various subgroups among renal transplant patients and analyzed the impact of slow graft function (SGF) and delayed graft function (DGF) on graft survival. Renal transplantation was performed on 362 patients receiving kidney from unrelated and 46 from related and 163 from deceased donors. Kidney transplant patients were divided into three groups, according to the initial graft function. First-week dialyzed patients form the DGF group. Nondialyzed patients are divided into SGF or excellent graft function (EGF) according to whether the day 7 serum creatinine was higher versus lower than 2.5 mg/dL, respectively. Graft survival was measured. Statistical analysis was performed using SPSS software, Kaplan-Meier table, and log ranks. Of the 570 renal transplant recipients, DGF was seen in 39 (6.8%) patients, SGF in 64 (11.2%) recipients and EGF in 467 (81.8%) patients and there was no significant difference in slow and delayed graft function between patients who had received kidney from unrelated and related living and deceased donors. Graft survival was worse among DGF than SGF or EGF patients, with no significant difference between the latter two groups (6-month graft survival, 74%, 93%, 96% and 3-year graft survival, 70%, 88%, 90%, respectively; log-rank test, P < .001). Kidney transplant recipients who developed DGF had a worse outcome than patients with EGF, and SGF patients. In conclusion, we found a similar impact of excellent and slow graft function on kidney graft survival, but kidney transplant recipients who develop DGF had a worse graft survival than patients with EGF and SGF.
**P-312**

EFFECTS OF ACTIVE VITAMIN D ON CO-STEMULATORY MOLECULES AND HLA-DR EXPRESSION IN RENAL TRANSPLANTATION

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1, 25(OH) 2 D3 inhibits T cell activation and maturation of dendritic cells and induces tolerogenic dendritic cells. This study was conducted to assess the effect of active vitamin D on co-stimulatory molecules and HLA-DR expression in renal transplant recipients. Renal transplant recipients who were transplanted 6-18 months before the study with stable allograft function, no episode of allograft dysfunction or febrile episode in the last 2 months were administered oral calcitriol for 4 weeks. Expression of HLA-DR, CD28, CD86, CD40 on peripheral blood leukocytes were checked by flowcytometry. Exclusion criteria were induction with Anti-IL-2 receptor blockers or ALG, history of vitamin D administration, change of immunosuppressive drugs or hypercalcemia during study. Table 1. Changes of co-stimulatory and HLA-DR molecules expression before after

Percent reduction P value CD28 2.30±0.74 1.61±0.91 30% 0.004 CD40 3.07±1.51 2.11±1.71 31.2% 0.0001 CD86 2.37±1.00 1.5±0.78 36.7% 0.0001 HLA DR 9.99±3.02 8.31±2.93 16.8% 0.0001 (a): percent of blood leukocytes with expressed marker (counted in at least 15,000 peripheral blood leukocytes by flowcytometry). Mean of serum calcium and creatinine were not changed statistically significant. In conclusion, by this study we have shown changes in co-stimulatory and HLA-DR molecules expression in these renal transplant recipients that may influence allograft survival.

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**P-313**

CLINICAL RELEVANCE OF PRE-TRANSPLANT ADIPONECTIN LEVELS FOR PREDICTION OF NEW-ONSET DIABETES AFTER TRANSPLANTATION

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Adiponectin is an adipose-specific protein with insulin-sensitizing and anti-atherogenic properties. It is not known if pre-transplant plasma adiponectin levels can be used to predict new onset diabetes after transplantation (NODAT). We performed a case-control study to evaluate the potential role of adiponectin as a risk factor for NODAT independent of obesity, and then to find a threshold for identification of high-risk patients. Forty nine patients with NODAT were compared to 49 transplant patients (controls), matched for age, gender, body mass index at the time of transplant, and the calcineurin inhibitor agent used for immunosuppression. Adiponectin levels were also measured in thirty five healthy subjects with normal renal function. Adiponectin levels were significantly higher in pre-transplant patients compared with healthy subjects (13.9 +/- 5.8 µg/ml vs. 9.5 +/- 4.2 µg/ml; p<0.0001). In multivariate analysis, higher plasma adiponectin level was protective against NODAT (incidence rate ratio 0.86 [95% CI 0.78-0.95], p=0.002). All patients with adiponectin levels ≤ 7 µg/ml (8.2%) developed NODAT. This corresponds to a positive predictive value of 100%. None of the patients with adiponectin values ≥ 22 µg/ml (7.1%) developed NODAT. For a threshold of 10 µg/ml (27.6%), more than one third of patients developed NODAT; the adjusted incidence ratio was 4.29 [95% CI 1.62-11.47] (p=0.004). This study shows that low pre-transplant plasma adiponectin levels are associated with a higher risk for subsequent development of NODAT. These results suggest that a threshold of 10 µg/ml can identify high-risk patients for whom preventive interventions might be employed.
P-314

ASSESSMENT OF GLOMERULAR FILTRATION RATE (GFR) WITH CREATININE-BASED ESTIMATES COMPARED WITH CYSTATIN C-BASED EQUATIONS IN RENAL TRANSPLANT RECIPIENTS

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Serum cystatin C has been shown to be a more sensitive marker for measurement of GFR, but it is not available for clinical use in all laboratories. Since the accurate estimate of GFR is important for clinical decision making in renal transplant recipients, we planned a study to compare several cystatin C-based equations with creatinine-based estimates to find the best practical model for GFR calculation in adult renal transplant recipients. The study group was consisted of 70 renal transplant recipients from living donors (46 males and 24 females) with stable kidney function. Patient’s data including age, gender, weight, BMI, kidney source and immunosuppressive drugs were collected on recipient’s visit. Then blood samples were collected for measurement of serum creatinine, cystatin C and serum albumin. Patients GFR calculated by Cockcroft-gault, modification of diet in renal disease (MDRD), abbreviated MDRD and five cystatin C-based equations .Then data analyzed by SPSS program. The mean age of recipients was 38.7 ± 13.4 years. All of patients were on cyclosporine, mycophenolate mofetil and prednisolone. The mean GFRs were (67.1 ± 25.9 ml/min/1.73 m2) by Cockgraft-gault, (61 ± 17.7 ml/min/1.73 m2) by abbreviated MDRD,(60 ± 18.6 ml/min/1.73 m2) by MDRD formula. Cystatin-C based GFR calculated with five different equations were (43.6 ± 16.2), (44 ± 13.2), (33.8 ± 14.1), (35.6 ± 13.7) and (36.9 ± 13.6) ml/min/1.73 m2 by Filler, Lebricon, Larsson, Rule and Hoek equations respectively. There was a significant difference between cystatin C-based equations in comparison to creatinine-based estimates (P<0.001). However we found a statistical difference between creatinine-based estimates and cystation C-based equations GFR, the MDRD formula results is closer to cystatin C GFR in our study. We recommend that until introduction of a more accurate model for practical application, MDRD equation is a better substitute for GFR calculation in our renal Tx recipients.

P-315

COMPARISON OF IMMEDIATE RENAL DYSFUNCTION IN SPLIT AND PARTIAL LIVER TRANSPLANTATION VERSUS FULL SIZE LIVER TRANSPLANTATION IN SHIRAZ TRANSPLANT CENTER

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Renal dysfunction (RD) is frequent complication following liver transplantation; it predispose to further complications that are associated with a high mortality. However, postoperative renal function after split liver transplant (SLT) and partial living related liver transplant (LRLT) has not been well studied. Renal function immediately after surgery was analyzed retrospectively in 32 patients that received SLT and LRLT. The results were compared to with corresponding data from 42 matched patients that received full size liver transplant (FSLT) during the same period. Serum creatinine (SCr) was measured before surgery, and, after transplantation daily during the first week and at day 14, 21, and 28 thereafter. Renal dysfunction was defined as the requirement for renal replacement therapy (RRT) or a 100% increase in SCr if the basal value had been <1.0 mg/dl or a 50% increase in SCr if the basal value had been >1.0 mg/dl. The incidence of acute rejection, reoperation, and complication such as sepsis was higher in SLT and LRLT group than FSLT group (P<0.05). There were no significant differences between groups with respect to MELD, CTP score, the need for transfusions, the length of admission to the hospital and ICU.RD developed in 25.8% of SLT and LRLT patients, but in only 9.5% of FSLT patients (p=0.063). The requirement for RRT in SLT and LRLT group (12.5%) was greater than that in the FSLT group (2.3%); P=0.20. The prevalence of postoperative renal failure in our patients [16.2%] (25.8% in split and partial liver transplant SLT patients and 9.5% in full-size liver transplant FSLT) was relatively lower than in other series. In our study despite higher incidence of RD in split and living related liver transplant (25.8% of patients) than full-size liver transplant (9.5% of patients), this difference is not statistically significant (P=0.063). This finding may relate to the criteria that we used to define RD and the limited number of patients studied, particularly in the SLT group. Our findings suggest that there is higher incidence of renal dysfunction in patients who received split and living-related renal graft than in those that receive full-size graft.
**P-316**

**Tc-99m DTPA RENAL SCINTIGRAPHY FINDINGS IN ALLOGRAFT RECIPIENTS WITH BORDERLINE CHANGES ON BIOPSY**

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Borderline changes on biopsy can either be interpreted as a variant of normal or as a variant of acute rejection. Some investigators regard it as a sign of early acute rejection and initiate treatment accordingly. In this study, we evaluated Tc-99m DTPA renal scintigraphy findings in allograft recipients with borderline changes on biopsy. Tc-99m DTPA renal scintigraphy was evaluated in 125 patients with acute allograft dysfunction. This study included 10 recipients with borderline changes on biopsy. Ten renal transplant recipients with low-grade acute rejection were studied as control group. Tc-99m DTPA renal scintigraphy was performed either as a routine procedure during the early posttransplantation period or at a time when renal function tests were impaired. After intravenous injection of Tc-99m DTPA, images were acquired every second for 1 minute (perfusion) and every 30 seconds for 20 minutes. Images were interpreted visually with respect to perfusion pattern, concentration ability and parenchymal retention. Normal scintigraphy findings were observed in 6 recipients with borderline changes (60%) and in 4 patients with low-grade acute rejection (40%). Among the remaining 6 patients with acute rejection, 4 had normal perfusion together with a minimal decrease in concentration and minimal parenchymal retention. In 2 patients, in addition to functional impairment, there was also decreased perfusion. None of the patients with borderline changes had perfusion abnormality. The remaining 4 patients had mild functional impairment. In conclusion, a normal Tc-99m renal scintigraphy is more common among patients with borderline changes compared to those with low-grade acute rejection. Minimal functional impairment, when present, cannot be differentiated from that due to acute rejection. The results of scintigraphy might contribute to patient management protocol. A Tc-99m DTPA study without perfusion abnormality or with normal findings might be regarded as a variant of normal and left untreated.

**P-317**

**ORGAN RUINATION; THE SHORTAGE OF RECIPIENT’S ORGAN ORGAN SHARING FAILURE CONSEQUENCE**

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Notwithstanding the organ shortage and prohibited deceased vital organ usage for the foreigners, USA heart and liver transplantation for African or Asian recipients are still considerable. Mismatch Vital Organ in developed states at all, is a real advantage for millions of people in over 100 non transplant countries around the world. This study by correlating ISFAHAN cadaveric organ prepare and use, is trying to evaluate the possibility of planning an accessory candidature list. According to Isfahan Province Donation Network (IPDN) database, since Jul 2001 to Mar 2008, 361 Multiple Trauma (58%) Head Trauma (22%) CVA (9.5%), and miscellaneous (10.5%) documented Brain death (mean age 25 ± 18) at 10 oriented ICUs, introduced to IPDN staffs for interview. Harvesting Failure due to Patient’s criteria & hospital care was 32%. Procurement Failure as a result of Time limits & familial regrets decreased compliant donor harvesting rate to 35%. From totally 348 safe and potential organs only 217 different organs have salvaged and transplanted (38% Organ wastage without pancreas and lungs account). In all these years, organ wastage unpredictably goes on and even develops [i.e. 2003(70/44), 2008(97/27)]. These data indicate that after two decades of successful IRAN’s transplantation trials, unification of all Iranian recipients in a nationwide waiting list is an exigent necessity. E-net scoring and matching empower all different transplantation teams to earn a better outcome. Maybe in this situation, citizen mismatch organs are absolutely declarable and Government could manage IRANIAN organ ruination by designing a subordinate waiting list.
The Shiraz Liver Transplant Audit collects information on all liver transplantations that are carried out in Iran. In this paper, we describe these transplantations and their outcomes in adult patients according to primary liver disease diagnosis, type of transplantation and period. A prospective cohort study of 364 orthotropic liver transplantations carried out between June 2002 and September 2008 in the Shiraz the west state of Iran. Actuarial survival rates, calculated using Kaplan-Meier method, were compared using the log-rank test. To determine independent prognostic factors for survival, Cox regression model analysis was used. Among the 364 patients included in the study (age 39 ± 13 years; 327 [68.1%] men), the most common causes of liver disease were hepatitis B and C virus infection (25.8%). Overall patient survival rates at 1, 2, 5 and 6 years after LT were 83.7%, 82%, 82% and 82%, respectively. Mean and SE of patient age was 64.6 ± 1.7 (CI95%: 61.2-67.9). Short time and long time survival of these patients in both sex and between age groups was similar. Survival of patients with MELD score above 20 wasn’t changes. Multivariable analysis demonstrated that these improvements only be explained by donors age between 20-40 years old. In summary, OLT has developed into a safe and successful treatment for end-stage liver disease with excellent long-term results, an experience with liver transplantation indicates success comparable to that noted in other reports.

Death is a non-reversible and the worst outcome of transplantation. Knowledge of mortality causes and related factors in patients who had successful and functioning lung transplantation is essential to provide a better care and implement better management measures. We reviewed the re-hospitalization charts of the lung transplanted patients at our lung transplantation center from 2000 to 2008. We looked for records of patients who were re-hospitalized in our center after having successful lung transplantation in the past. The outcome of hospitalizations along with the patient’s characteristics and disease specifications were extracted. For statistical analysis we used descriptive methods and for comparison between those re-hospitalizations that led to death and those which led to recovery, we used Mann-Whitney U and Chi-square tests. During the specified period 13.8% of the complications that needed re-hospitalizations led to death. The cause of admission in 50% of cases which led to death was acute rejection accompanied with infection. All the patients that died were admitted to transplantation ICU. 12.5% of cases with infection, 22.2% of case with acute rejection and 33.3% with concomitant infection and acute rejection as the cause of re-admission died during hospitalization. The mean age of transplantation in cases that led to death was 446.3 ± 171.9 days which is higher compared to those who survived (233.5 ± 176.1; p= 0.049). Acute rejection and infection were the main causes of mortality after re-hospitalization in lung-transplant re-hospitalizations. Hospitalizations with transplantation ICU admission and those related to patients with longer transplant age are at greater risk of undesirable outcome.
P-320
DEPRESSION IN THE WAITING LIST OF LUNG TRANSPLANTATION

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Severe illnesses make a patient prone to depression and depression adds to the burden of the disease. Patients awaiting lung transplantation have severe disease and most of them know that they may not be lucky enough to breathe through a new lung. Such expectation along with restrictions that the illness imposes makes them prone to depression. In the current study we investigate the presence of depression in a group of patients on lung-transplantation waiting list in Iran. In a cross-sectional study from August to September 2007, 64 lung-transplantation candidates from lung transplantation clinic of Masih Daneshvari Hospital have entered the study. The participants signed a written consent for participating in study. We used the Beck questionnaire to evaluate patients’ depression. It is a highly validated questionnaire to identify the presence and severity of depression. It has 21 items and higher scores indicate more severe depressive symptoms. The total score of questionnaire ranges from 0 to 63. In Iranian population, scores from 0 to 15 indicates no problem, 16 to 30 indicate mild, 31 to 46 moderate and 47 to 63 indicate severe depression. The mean age of the patients was 36.6 ± 13.6 years. 70.3% of the patients were male and 29.7% were female. Regarding the marriage status, 40.6% were single and 59.4% were married. In the studied patients, 43.8% had no depressive symptoms, 37.5% had mild depression and 18.7% had moderate depression. We found that more than half of the patients on lung transplantation waiting list have some degrees of depression. Since there is a risk of non-compliance to treatment and follow-up protocols in depressed patients, we recommend depression screening before transplantation and if diagnosed, closer observations of the patients regarding the mental morbidities like depression.

P-321
COMPLICATIONS DURING AND AFTER LUNG TRANSPLANTATION HOSPITALIZATION

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Complications after a major procedure like lung transplantation could be devastating both for patients and the transplantation team. Knowledge of common complications is essential to adapt proper preventive and therapeutic measures. Since the nature of problems varies from one center to another, we report here complications after lung transplantation surgery from our center. In a retrospective study, we reviewed hospitalization data of all lung-transplanted patients in our center. We looked for the complications after performing lung transplantation surgery. We classified the complication in to: infectious, surgical, pulmonary, rejection-related and other causes. Regarding the timing of developed complication to the surgery, we categorized them into immediate (less than 2 weeks), early (2 weeks to 2 months) and late (more than 2 months) after surgery. All lung transplanted patients developed a complication during the hospitalization period. 82.6% of patients developed immediate, 56.5% developed early and 52.2% developed late complications. The most frequent complication in immediate phase was surgical (65.2%) and in early and late phases were infectious problems (43.5% and 47.8%, respectively). Altogether, 69.6% of patients developed surgical problems, 56.5% had pulmonary edema, 56.5% had infectious problems, 52.2% had some problem with graft rejection and 78.3% had also some other problems. We observed that complication were very frequent after lung transplantation. Surgical, infectious and pulmonary problems were the most common complications during hospitalization for lung transplantation.
P-322
THE COST OF LUNG TRANSPLANTATION IN IRAN
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Lung transplantation is one of the most complicated medical procedures. The aim of the current study is to report the cost of lung transplantation in Iran. We reviewed the hospital data of all lung transplantations performed in Masih Daneshvari Hospital, Tehran, Iran, from 2000 to 2008 and extracted the costs during hospitalization for the transplantation surgery in transplantation recipients. We excluded cases that died shortly after the transplantation surgery. We then categorized the costs into seven distinct groups: accommodations, personnel, drugs, paraclinics, consumptive tools, procedures and other costs. Data was primarily extracted based on Iranian national currency (Rials) and then converted to US dollar (10,000 Rials = 1 $). We report the mean of the costs in each category. The mean total cost of lung transplantation was 13801.6 ± 7752.3 USD (range: 6104.9 to 26888.7). This cost was related to the specified categories as followed: consumptive tools = 35.55%, drugs = 34.46%, personnel = 10.14%, accommodations = 8.14%, procedures = 5.66%, paraclinics = 5.49%, other costs = 0.56%. As we expected, the cost of lung transplantation is high, compared to other similar procedures. This could be due to the complexity of the procedure, higher number of the involved specialists, the long duration of hospital stay and the presence of complications. Our results also showed that the cost of lung transplantation is far below the reported costs from other countries.

P-323
SURVIVAL ON LUNG-TRANSPLANTATION WAITING LIST
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Patients on the waiting list for lung transplantation are mostly at end stages of their disease and they eventually die on waiting list. The survival of the patients varies dramatically from one disease to another and from one center to other one. It is caused by the nature of the disease and the condition of patients in every center’s waiting list. We describe here the survival of the patients on lung-transplantation waiting list from Iran. Material and methods: in a retrospective design, we used data of the waiting list for lung transplantation at Masih Daneshvari lung transplantation center. It is developed in 2003 and information about eligible lung transplantation candidates is registered here at a regular manner. At September 2008, we reviewed the list and contacted those patients who were still alive in the last follow-up and asked about their status. We then used survival analysis, Kaplan-Meier and life table, to find the survival of the patients on the waiting list. Results: the mean age of the patients was 40.1 ± 16.7 years. In 170 patients registered at our waiting list, 33(19.3%) deaths occurred. The survival rate at 6 months, one and three years were 85%, 78% and 75%, respectively. Discussion: as we observed, survival of the patients on waiting list for lung transplantation is not so favorable. This could be due to the nature of the disease, severity of the illness and presence of complications.
P-324
A STUDY ABOUT THE ORGAN TRANSPLANTATION AND DONATION CONSCIOUSNESS LEVEL OF THE TEACHER CANDIDATES

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The scantness of organ donation and inadequate organ transplantation in Turkey results in the deaths of the thousands of patients who are in waiting list. Recently performed studies showed that the reason for the scarcity of organ donation in our country is the insufficient education about organ donation. We thought that the selection of basic education teachers as a target population will provide an important contribution to the population’s knowledge about this subject; the aim of this study was to evaluate the knowledge about organ donation and transplantation and to find out the effect of training about this subject in the last year teacher candidates in Gazi University Education Faculty. In the first part of the study, the knowledge about the organ transplantation of the 450 teacher candidate students in Gazi University Education Faculty, Early Childhood, Social Sciences, Science Teaching Programme were tested between April 2008 and May 2008. After then an education about organ donation and transplantation was given to these teacher candidates by Gazi University Transplantation Center. The knowledge was then tested again in the same manner after the course and the results were evaluated.

The evaluation before the education; among the teacher candidates, 62% of them said that organ transplantation is necessary, 46% of them had talked this subject with their families before and 68% of them told that they could donate the organ of their relatives when needed. Only 22% of the participants had exact knowledge about which organs could be donated. On the other hand 81%, 65%, 54%, 22%, %10 of the participants have information about the transplantation of kidneys, heart, liver, lung and pancreas respectively.

It was learned that the information about organ donation was achieved from radio and television by the 82% or the participants whereas only 32% of them had information from their lessons. About how the organ donation will be, 52% of participants thought that organ transplantation centers are the place to go, whereas 34% mentioned the Branch Office of Health Management. In questioning, 74% of the candidates were found to be willing to take part in the course about organ transplantation, whereas 25November of them didn’t need it. In the evaluation after the education; it was found that 83% of participants were happy that they had attended this programme, 93% of them stated that all the questions in their minds had been answered in this programme. In the evaluation of the participants’ thoughts after the education; 78% of them said that they could donate their organs, 69% of them said that they could donate their relatives organs and 61% of them told that they could donate their childrens’ organs.

After the education; 96% of the teacher candidates mentioned that they would pass on this education to their surrounding people about organ donation. The study showed that education seminars about organ donation and transplantation increased the knowledge of teacher candidates. Consciousness about this in teachers and their interest and contribution in this subject will result in giving the right information to large population. This way an important solution for the serious organ donation scantness will be found in our country.

P-325
EXERCISE CAPACITY BEFORE LUNG TRANSPLANTATION: CORRELATES AND PREDICTORS

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Exercise capacity, measured as the 6-minute walk test (6-MWT) result, is a determining factor in lung transplantation based on which a patients is judged to be transplanted or not. We investigated to see which factors are correlated to and which are predictors of exercise capacity in lung transplantation candidates. Data regarding 6-MWT along with demographic data, spirometry test results and some biochemical laboratory findings were extracted from lung transplantation waiting list database at Masih Daneshvari Hospital, Tehran, Iran. We used independent sample t-test and one-way ANOVA to compare findings between two or more groups of data. We used Pearson correlation coefficient to find which of the variables are significantly correlated with 6-MWT and used a linear regression model to see which of them are the predictor of 6-MWT.

Data of the 88 patients has been extracted. 62(71%) of the patients were female. the mean age of the patients was 38.4 ± 16.1 years. the cause of the disease was bronchiectasia (39.8%), COPD (26.1%), pulmonary fibrosis (17%), primary pulmonary hypertension (12.5%) and other causes (4.5%). The mean 6-MWT was 271.7 ± 124.6 meters. There were no significant differences in exercise capacity among groups based on gender or disease. Age (R=0.282, p=0.008), basal O2 saturation (R=0.322, p=0.002), FEV1 (R=0.217, p=0.046), FVC (R=0.239, p=0.028), PI-MAX(R=0.379, p=0.013) and BMI(R=0.215, p=0.047) were all significantly correlated with 6-MWT. After entering the regression model, basal O2 saturation (R2= 3.58, p<0.001), age (R2= -2.37, p= 0.002) and FVC (R2= 1.58, p= 0.033) were the predictors of 6-MWT (R2= 0.865, p < 0.001). In conclusion, we found that higher basal O2 saturation, younger age and higher FVC are predictors of better exercise capacity which could lead to better outcome after transplantation.
**P-326**

**PATIENTS ON LUNG TRANSPLANTATION WAITING LIST: CHARACTERISTICS AND ETIOLOGY**

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Lung transplantation is one of the most sophisticated transplantation procedures. The outcome of the patients is not only related to the procedure itself, but also the pre-transplantation condition of the patients has a great influence on the outcome of the lung transplantation. We describe here the characteristics of patients on our waiting list for lung transplantation. Our data come from the lung transplantation waiting list database at Masih Daneshvari Hospital, Tehran, Iran. Patients' registry began from September 2000 in our database and there are currently 170 patients in our waiting list. We describe here demographic, primary disease cause, pulmonary function test and other laboratory finding here. From 170 patients on the waiting list, 47(27.6%) are male and 123(72.4%) are female. the mean age of the patients is 40.1 ± 16.7 years. the mean time on waiting list was 1.8 ± 1.5 years. the cause disease is bronchiectasia (n=57;33.3%), COPD (n=38, 22.2%), pulmonary fibrosis (34, 19.9%), primary pulmonary hypertension (25,14.6%) , and other causes (17, 9.9%). The mean FEV1, FVC and 6-minute walk test result in different diseases were as follows: COPD: 27 ± 14.2, 33.1 ± 14.7, 267.3 ± 130.3; bronchiectasia: 34.1 ± 14.1, 33.8 ± 14.4, 285.1 ± 121.1; pulmonary fibrosis: 26.4 ± 15.7, 31.5 ± 14.3, 237.5 ± 139.5; primary pulmonary hypertension: 43.1 ± 24.5, 45.8 ± 22.3, 296.3 ± 124.8. In conclusion, the main cause for pulmonary insufficiency in our waiting list was bronchiectasia, followed by COPD and pulmonary fibrosis, which is different from other lung transplantation centers. This is in contrast with other lung transplantation centers where COPD patients, who have better outcome after lung transplantation, constitute the majority of the transplantation candidates. Such differences in lung transplantation candidate characteristics may have a negative impact on the outcome of lung transplantation.

**P-327**

**MEDICAL CARE REQUIREMENTS FOR LUNG TRANSPLANTATION PROCEDURE**


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Successful lung transplantation is more the yield of proper management than the techniques. The specialists who manage the patients should have proper access to required resources to meet the patients need. Therefore, all transplantation specialists should have a true knowledge of the lung transplantation requirements. The aim of the current study is to investigate what the lung-transplanted patients required during their hospital stay for the transplantation surgery. Our data come from the lung transplantation center at Masih Daneshvari Hospital, Tehran, Iran. We reviewed all hospitalization documents and extracted the medical resources the patients utilized during their hospitalization for lung transplantation surgery. We described the data as frequencies, percents and mean where appropriate. The mean duration of hospitalization was 38.5 ± 35.3 days. The mean ICU stay duration was 32.8 ± 30.2 days. Physicians made 87.9 ± 77.1 visits to the transplanted patients (pulmonologists: 51.97%, surgeons: 29.13%, anesthesiologists: 14.96%, other visits: 3.94%). Nursing care visits was 646.2 ± 818. During their stay 37.1 ± 25.8 diagnostic imagings were performed (radiography: 79.5%, CT Scan: 10%, echocardiography: 7%, sonography: 3.5%). The number of laboratory and pathology tests performed was 533.5 ± 401.1 and 14.5 ± 14.2, respectively. Physiotherapy visits were 106.3 ± 89.9. As our results show, lung transplantation surgery and post-operation cares are highly resource taking. We conclude that hospitals should be highly prepared, if they want to put lung transplantation in prospect.
Cold ischemic time, defined as the time interval that begins when an organ is cooled with a cold perfusion solution after organ procurement surgery and ends when the organ is implanted, proved to have great impact on the outcome of transplantation. The degree to which the ischemic time affects the outcome of transplantation is related to the sensitivity of that organ to ischemia. In this respect, the most sensitive organ is lung. Cold ischemic time is especially important when the harvested organ should be transported a long distance or within cities with heavy traffic load. We have developed a system for management of cold ischemia to lessen the damage to more sensitive organs. Masih Daneshvar Hospital is the referral center for lung transplantation in Tehran, Iran, with a capable organ procurement center which receives brain death data from more than 56 hospitals in the city. In many jammed traffic hours traveling from many of the referring hospitals to the center takes more than 2-3 hours. Considering the limitation in airborne transportation, taking the harvested lungs takes a considerable amount of time. In our model, when the lungs of a patient is suitable for transplantation, brain dead patient is carefully transported by equipped ambulances to our lung transplantation center and the center takes the responsibility of all organ harvests. As a result, lungs with the most sensitivity to ischemia are protected from damage. This system won’t harm the other harvested organs. Heart, with cold ischemia tolerance of more than lungs, is harvested and in some case is transplanted in our center and in other cases is transported to other centers. In all cases, liver and pancreas should be sent to other city, Shiraz. Kidneys and corneas are also sent to other transplantation center as routine. This system does not interfere with transplantation of other organs but protects the lungs from cold ischemia damage. In addition to cold ischemic time, this method also lets us take better care of the organs by our expert team specialized in brain death management. We can manage the lungs better by sterile endotracheal suctioning and suitable ventilator set up. The other benefits include ease of performing recruitment maneuvers to expand the atelectasis and resolve edemas which ultimately makes unsuitable lungs suitable for transplantation. We recommend other transplantation systems adapt similar harvest policies based on to lower the cold ischemic time of the more sensitive organs.
FATAL ACUTE PURULENT PERICARDITIS IN A RENAL TRANSPLANT PATIENT - A CASE REPORT.

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Acute purulent pericarditis is a dreadful disease, though it is becoming uncommon in the era of antibiotics. We present a case of Fatal Acute massive purulent pericarditis in a kidney transplant recipient. The patient had an unrelated commercial renal transplantation in 2003. She had history of diabetes mellitus, Hepatitis C infection and Kaposi sarcoma in the post transplant period. Her last admission was prompted by the development of an acute rejection that was confirmed by a transplant biopsy. She was treated with Intravenous Methyl prednisolone for this purpose. Three days before her death, thrombophlebitis of the Right forearm was noticed. We postulate that this could have been the source of the fulminant purulent pericarditis, as the organism in the pericardial fluid was a staphylococcus, the common pathogen involved in thrombophlebitis. She could be initially resuscitated but eventually succumbed to her infection. We conclude that severe purulent pericarditis in the immunocompromised patient can occur abruptly. The source may be of minimal signs and symptoms. The evolution could be shrouding. Thrombophlebitis and apparently minor infections should not be overlooked or under estimated in such patients.

ETIOLOGIC AGENTS OF PNEUMONIA IN LIVER TRANSPLANT RECIPIENTS

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The aim of this study is to determine the etiologic agents of pneumonia in liver recipients. Medical records of liver transplantations performed between January 2000 and January 2007 in our hospital were examined retrospectively. Pneumonia was defined as the presence of a new or progressive and persistent infiltrate on chest radiography associated with at least two of the following criteria as described: leukocyte count greater than 10.5x10^9/L or less than 3.5x10^9/L; temperature higher than 38°C or lower than 36; new onset of purulent sputum, change of character of sputum or increased respiratory secretions; new onset of worsening cough, dyspnea, tachypnea, rales, or bronchial breath sounds and worsening gas exchange (i.e., oxygen desaturation, increased oxygen requirements or increased mechanical ventilatory support). One hundred and sixty-two liver transplantations were performed between January 2000 and January 2007. Twenty-three episodes of pneumonia were diagnosed in 19 (11.7%) patients. Eleven (47.9%) of the 23 episodes were seen in the first month after transplantation and were defined as nosocomial pneumonia. Two (8.6%) episodes were seen during the 1st and 6th months. Ten of the 23 (43.5%) episodes were seen in the late period (i.e. later than 6 months after transplantation). Etiologic agents were isolated in 6 (54.4%) of the 11 nosocomial infections: 1 Klebsiella pneumoniae, 1 Escherichia coli, 1 Pseudomonas aeruginosa, 1 Stenotrophomonas maltophilia, 1 Candida albicans, 1 non-albicans Candida. The two episodes seen during the 1st-6th months after transplantation were due to Aspergillus spp. and cytomegalovirus. Only one (10.0%) etiologic agent determined in the late period was Streptococcus pneumoniae. In conclusion, empirical antibacterial therapy is the cornerstone of management of pneumonia but determination of specific etiologic agents particularly in the immunocompromised patients is of great importance. The low percentage of isolated etiologic agents in the late period is probably due to the empiric use of antibiotics before the respiratory samples were taken.
FOOD ALLERGY AFTER LIVER TRANSPLANTATION IN CHILDREN: A PROSPECTIVE STUDY

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Food allergy (FA) has been increasingly reported in children who undergo liver-transplantation (LT). We aimed to conduct a prospective study to investigate the prevalence of sensitizations and food allergy in pediatric LT patients. We also aimed to identify potential risk factors. Twenty-eight children with end-stage liver disease (14 male, mean age 4.96±0.76 years) who had LT between September 2004 and February 2008 were included in the study. Total eosinophil count, total IgE, and food-specific IgEs were studied before and 3, 6, 12 months after transplantation. Six patients (21%) developed multiple food allergies. Mean age of 6 patients at LT who developed FA was younger compared to the non-FA group (10.2 months versus 68.9 months, respectively p<0.05). Food allergy has been developed within 1 year in 5, and in 20 months in one patient after LT. All 6 patients had cow’s milk and egg allergy after LT. Five children developed wheat, one child developed lentil, and another one developed peach allergy in addition to cow’s milk and egg. The allergic symptoms were chronic diarrhea in 3 patients, angioedema in one patient, and both in 2 patients. We performed endoscopic examinations in three of 5 patients who developed diarrhea. Endoscopic examinations were visually normal, however duodenal and colonic biopsies revealed eosinophilic duodenitis and eosinophilic colitis in all of them. Before LT, total eosinophil counts and total IgE levels were not different among food allergic and non-food allergic patients (p>0.05). Mean value of total eosinophil counts were significantly higher in food allergic group compared to non-food allergic group at each cross section after LT (p<0.05). Though statistically insignificant, mean of total IgE levels were also higher in the food allergic group (p>0.05). In Conclusion, Pretransplant investigations (total IgE and eosinophil count) did not predict post LT food allergy. Young infants were more prone to developing FA. Elevated total eosinophil counts may be an indicator for FA.

STUDY OF INVASIVE ASPERGILLOSIS IN LIVER TRANSPLANT RECIPIENTS BY NESTED PCR

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Invasive aspergillosis in liver transplant recipients still represents serious complications and is associated with a significant decrease in survival. Invasive aspergillosis occurs in 1 to 8% of liver transplant recipients and associated with high level mortality. Despite extensive investigation on methods such as serologic techniques to improve the rapid diagnosis of these infections, the diagnosis of invasive mycoses remains largely dependent on clinical presentations. The aim of this study was to describe the incidence and outcomes of invasive aspergillosis in liver transplant recipients by Nested PCR. From March 2004 to July 2008, 408 recipients underwent liver transplantations in solid organ transplant unit in Nemazi Hospital, Shiraz University of Medical Sciences, Iran. Sera from patients suspected to fungal infections were extracted for Aspergillus DNA. The PCR was performed as a nested PCR with two sets of primers. It is worth mentioning that this PCR is able to identify all Aspergillus species (panfungal aspergillosis). The lower limit of detection of this PCR assay was one colony forming unit/ml of serum. Of these 408 recipients, 42 patients were suspicious to invasive aspergillosis and Nested PCR was positive in 19 (4.6%) patients with proven & probable criteria. The mean time for the onset of invasive aspergillosis following transplantation was 44 days in the present study. In conclusion, this study has determined the incidence of Aspergillus infection after liver transplantations. Considering the above findings, preventive strategies should focus on reducing both environmental and host risk factors.
**P-334**

**TUBERCULOUS LYMPHADENITIS IN PEDIATRIC LIVER TRANSPLANTATION**

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Tuberculosis (tbc) is a rarely seen opportunistic infection after liver transplantation (LT). Tbc incidence was reported as 2.4% (6/254) in pediatric LT recipients in United Kingdom. Here we presented a case of tbc lymphadenitis occurred in 1 out of 109 (0.9%) children who underwent LT between September 2001- March 2008 in our hospital. Case A left lateral segment of her mother’s liver was transplanted to the 7 months old patient with the diagnosis of PFIC-2. She had BCG vaccine when she was 1 months old. Her PPD test and EBV IgG was negative before LT. 16 months after LT she had primary EBV infection. Her EBV viral load was 4.8x105 copies/mL. Tacrolimus dose was decreased and oral acyclovir was prescribed for this reason. Three months later, she presented with high fever, cough, weight loss, and sweating. On physical examination bilateral hard submandibular lymphadenopathies were palpated. Her erythrocyte sedimentation rate was 95mm/h; CRP was 97.4 mg/dl. Ultrasonography demonstrated multiple lymphadenopathies at bilateral cervical chain and submandibular areas. She underwent submandibular lymph node tru-cut biopsy with the possible diagnosis of EBV-related post transplantation lymphoproliferative disease (PTLD). Surprisingly pathological diagnosis was granulomatous lymphadenitis. Multiple acid-fast bacilli were demonstrated in the lymph node. Mycobacterium tuberculosis grew in gastric juice. Her chest X-ray and thorax tomography were normal. Her family screened and no tbc cases could be identified. Streptomycin (2 months, intramuscular), pyrazinamide (2 months), isoniazid (1 year) and rifampicine (1 year) were started. She was kept on tacrolimus treatment. At the end of tbc treatment her lymph nodes became smaller and no hepatotoxicity developed. Conclusion: In children our knowledge about presentation, diagnosis and treatment of tbc after LT is limited. Tbc lymphadenitis should be in the differential diagnosis of enlarged lymph nodes in liver transplanted children.

**P-335**

**NEOPLASTIC COMPLICATION OF THE RENAL TRANSPLANT**

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The purpose of this study is to determine the incidence of the malignant tumors in Tunisian renal transplanted population and to establish the risk factors to develop a cancer in transplanted kidneys. Through a retrospective study about 403 renal transplants cases between June, 1986 and May 2005, 31 patients developed a de novo cancer. The average age at the time of transplantation was 36 years and it was 42 years at the time of diagnosis. The average delay of appearance is 74 months. 42 % of the patients had a positive serology for cytomegalovirus. In conclusion, cancers post-transplantation are frequent and contributing to mortality. The incidence of this pathology can be reduced by taking into account the age of the recipient and the histocompatibility between donor and recipient.
Liver transplantation has become gold standard for end stage liver diseases. But Turkey like other countries has struggled to achieve cadaver donation. Thus, this shortage of cadaveric donations lead doctors to use marginal donors. Donor was a 16 years old man. Cause of brain death was Coumadin associated cranial bleeding. Donor had history of heart valve surgery. The harvesting was done 16th days after ICU staying when the blood culture was positive with Aspergillus. Liver and two kidneys were transplanted from this donor. The liver recipient was 29 years old woman. Chronic liver disease was secondary to HBV+delta infection. The transplantation was performed in Gazi University Transplantation Center on December 2007. She had an uneventful postoperative period with Tacrolimus based immunosuppression and discharged on day 10. Then, she admitted to hospital due to biliary stenosis and related elevation of liver enzymes and bilirubin. Solid lesions were seen at the liver graft in the abdominal USG. Biopsy was performed. Fungus was found in the biopsy. We searched the outcome of the two other kidneys. We learned that patients were undergone graft nephrectomy due to aspergillus abscess in the graft. Because voriconazole did not have any benefit, the ambizone treatment was started. She is doing well in her seventeen months of transplantation.

Pulmonary complications after liver transplant significantly affect mortality and morbidity; however, their relation has not been clearly established. We sought to determine pulmonary complications in the early and late term after liver transplant and identify risk factors for mortality. At our institution, 130 liver transplant patients (mean age, 40.1 ± 14.6 years; 71.1% male) were retrospectively evaluated, and 114 adult orthotopic liver transplant patients were included. Cause of liver disease, pulmonary function test results, arterial blood gas analyses, surgery duration, length of stay in the intensive care unit and the hospital, pulmonary complications, and mortality causes were noted. Pulmonary complications were detected in 48 patients (42.1%), pneumonia in 24 patients (21.1%), and pleural effusion in 21 patients (18.4%). Development of pulmonary complication was found to be significantly related to survival (P =0.001). Fifty-two patients (45.6%) were smokers, a significant predictor of pulmonary complications (P =0.03). There was no relation between pulmonary function test results and orthodeoxia and pulmonary complications and mortality. Early and late survival were significantly lower in patients in whom a microorganism was isolated on deep tracheal aspirate culture, while early survival was significantly reduced in the presence of pleural effusion (P < 0.005). In Conclusion, pulmonary complications after liver transplant are common. Care must be taken to determine preoperative risk factors, and patients should be observed closely for the development of respiratory complications after liver transplant.
HEPATOPULMONARY SYNDROME AND INTRAPULMONARY VASODILATATION IN CHILDREN WITH CHRONIC LIVER DISEASES

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The hepatopulmonary syndrome (HPS) is defined as the triad of liver disease, arterial desaturation, and pulmonary vascular dilatation. The reported prevalence of HPS in adult cirrhotic patients varies between 4% and 19%, and various threshold values defining arterial desaturation have been used and recommended previously. We studied 114 pediatric patients (£ 18y) for the presence of HPS, using contrast enhanced echocardiography for detection of pulmonary vasodilatation and blood gas analysis for hypoxia. Sixty patients (52%) had positive contrast enhanced echocardiography that means 52% of patients had intrapulmonary venous dilatation, of 71 patients with ABG (Arterial blood gas) 25 patient have positive contrast enhanced echocardiography with Pao2 <70 that means 35.5% of our patients fulfilling the criteria of hepatopulmonary syndrome. We concluded that pulmonary venous dilatation and hepatopulmonary syndrome are common finding in children with chronic liver disease. In dependent to causes the prevalence was higher than those reported in adulthood that means more vascular responsiveness or angiogenesis in children. Ejection and shortening fraction were normal or high and no one had indirect sign of pulmonary hypertension.

EVALUATION OF DEPRESSION AND ANXIETY IN PRETRANSPLANT PATIENTS

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Depression and anxiety are among the principal manifestations of chronic illness and play a central role in patients’ experience with life-limiting disease. Chronic renal insufficiency and hemodialysis (HD) treatment is a clinical condition with a huge impact on patient quality of life. Hemodialysis patients must confront the burdens of long-term illness and numerous treatment-associated stressors. The purpose of this study was to determine the depression and anxiety in chronic pretransplant patients. This was a descriptive survey study performed in the Mashad University of Medical Sciences during the year 1384. 150 patients regularly treated with hemodialysis were chosen through sensor sampling. Depression was measured using CES-D (The Center for Epidemiological Studies Depression Scale) and anxiety was studied by Eshpil Berger standard questionnaire. Results were given in average values with standard deviation. Comparisons between categorical data were performed using Student’s t test, X2 test. Values of P less than 0.05 were considered significant. This study revealed that prevalence of depression was 64.5 percent in pretransplant patients (Cut-off value was 16). This group had 51.4 percent prevalence of State Anxiety and 49.0 percent of Trait Anxiety. Statistical analysis demonstrated that there is a meaningful correlation between depression and history of graft failure (p<0.04), dialysis duration (p<0.01), family income (p<0.001) and working status (p<0.02). However, there was no significant correlation between depression scales and demographic factors including age, gender, frequency of dialysis and married status. Our study showed that a substantial number of patients before transplantation experienced depression and anxiety. With regarding to this problem, necessity for having consulting and psychotherapy center in hemodialysis ward is emphasized.
P-340
QUANTIFICATION OF HUMAN CYTOMEGALOVIRUS DNA BY A NEW CAPTURE-HYBRID PCR-ELISA IN PLASMA AND PERIPHERAL BLOOD MONONUCLEAR CELLS OF BONE MARROW TRANSPLANT RECIPIENTS

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Quantitative monitoring of human cytomegalovirus (HCMV) infections is helpful in determining appropriate antiviral management of bone marrow transplant (BMT) recipients. The objective of this study was to design and evaluate a new HCMV capture-hybrid PCR-ELISA in plasma and peripheral blood mononuclear cells (PBMCs) to monitor HCMV infection in a population of bone marrow transplant recipients. Twenty six allogeneic bone marrow transplant recipients, including 17 males and 9 females (9 adults and 17 children), were enrolled in this study. A total of 313 consecutive whole-blood specimens from 0 to 120 days post-transplantation were evaluated in the study. A newly design biotinylated probe mediated quantitative competitive PCR-ELISA test was used to determine HCMV viral load in samples. All 26 patients were HCMV sero-positive before transplantation. Capture-hybrid PCR-ELISA of PBMCs detected HCMV DNA in 287 of 313 specimens, also PCR-ELISA of plasma detected HCMV nucleic acid in 114 of 313 specimens. Increasing titers of HCMV DNA were detected in 14 of 26 BMT recipients. In conclusion, the developed quantitative capture-hybrid PCR-ELISA demonstrated the capability of monitoring and diagnosis of HCMV infection in bone marrow transplant recipients. Although PCR-ELISA detection of DNA in PBMCs was the earliest and most sensitive technique used for the diagnosis of HCMV nucleic acid, but PCR on plasma was more predictive of the onset of HCMV-related clinical symptoms.

P-341
THE ROLE OF HELICOBACTER PYLORI AND IL-8 AND IL-12 IN DEVELOPING THROMBOTIC THROMBOCYTOPENIC PURPURA AFTER BONE MARROW TRANSPLANTATION

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Thrombotic thrombocytopenic purpura (TTP) is a severe, occlusive, thrombotic microangiopathy characterized by a systemic platelet aggregation, organ ischemia, profound thrombocytopenia and erythrocyte fragmentation. However, in spite of the recent progresses in the pathophysiology of TTP, many aspects of this disease remain still controversial. Recently Helicobacter pylori, has been implicated in the pathogenesis of idiopathic thrombocytopenic purpura (ITP) as a triggering factor in TTP by inducing platelet aggregation through an interaction with von-Willebrand factor (VWF). In this study, an alternative pathogenic mechanism for TTP involving Helicobacter pylori infection is proposed. Ninety four patients undergoing transplantation were enrolled in them H pylori infection was recognized by UBT and stool antigen detection and the levels of two cytokines of IL-12 and IL-8 were determined by ELIZA methods. Eight patients developed TTP and 86 did not (controls). A significant higher-positive rate for H. pylori infection was shown in the TTP group (p < 0.05). However, the levels of interleukin-12 and interleukin-8 increased significantly at the onset of TTP (p< 0.05) in compared with their levels in the control group. In conclusion, H. pylori may play a role in the pathogenesis of TTP in BMT patients, with involving IL-8 and IL-12.
P-342
THE ROLE OF DIFFERENT RISK FACTORS IN CLINICAL PRESENTATION OF HEMORRHAGIC CYSTITIS IN BONE MARROW TRANSPLANT RECIPIENTS

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Hemorrhagic cystitis (HC) is one of the important complications threatened the safety of bone marrow transplantation (BMT). Early and late-onset HC with low to high severity have been seen in BMT patients. Different risk factors including: host factors, donor related factors and environmental factors have role in HC grading and presentation. In this research we tried to study the accurate role of these factors in HC related clinical complications in BMT recipients. In this cohort and retrospective investigation, for study of HC risk factors, the clinical and laboratory data of 283 transplanted patients between years: 1372-1385 were reviewed. Some of these patients received myeloablative regimen including busulfan and cyclophosphamide with or without etoposide. Other recipients received non myeloablative regimen including: fludarabin, cyclophosphamide and anti-thymocyte globulin. For prevention of GVHD, cyclosporine and prednisolone with or without methotrexate were used. HC prophylaxis was done by bladder irrigation or using mesna and hyper hydration. The collected results were statistically analyzed by SPSS soft ware. Results: Some of these results are presented as follow: HC was seen in 120 patients (42/4%) including: early-onset in 47 (39/2%) and late-onset in 73 patients (60/8%). One to four grades of GVHD was seen respectively in 39 (32/5%), 43 (35/8%), 26 (21/6%) and 11(9/1%) transplant patients. The most cases with early-onset of HC was detected in donor-recipient sex mismatching (P=0/086). Significant correlations were detected between late onset of HC with use of bone marrow as a source of stem cells (P=0/001) and with class II and III of thalassemia as an underlying disease of BMT recipients (P=0/019). Receiving both cyclophosphamide and busulfan or ATG as transplant conditioning regimen increased the risk of late-onset of HC (P=0/001, p=0/073), respectively. Allogeneic transplant, GVHD symptoms and using prednisolone and cyclosporine as prophylaxis and treatment of GVHD, and gancyclovir and IVig as antiviral treatment have significant role in increasing the incidence and severity of HC clinical symptoms in BMT patients.

P-343
EVALUATION OF SERUM BETA 2- MICROGLOBULIN (B2-MG) IN BONE MARROW MARROW TRANSPLANT (BMT) RECIPIENTS

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Beta 2- micro globulin is a low –molecular weight protein (11800 Daltons) and found in all biological fluids. It is the light chain of histocompatibility class 1 and present on the membrane of most cells. The presence of class 1 HLA antigen plays a role in the elimination of the virus after infection with hepatitis viruses. Graft versus Host Disease (GVHD) is the important complication of bone marrow transplantation (BMT). We tried to evaluate plasma B2MG level in allogeneic BMT recipients. In this study we measured serum B2MG level by ELISA Kit in serum of 39 patients before transplantation and on 3, 10, 17, 24, and 30 days after BMT. 16 female November 41 and 23 male November 59 between 8-52 years and 28 healthy control in same age range were included. Our study showed □2 MG level increased in 15(38/2%) patients after BMT that was significantly differed from healthy control. (p=0.0001). In conclusion, it seems that serum □2MG is a good marker for Bone marrow Transplant (BMT) recipients The role of β2MG in monitoring of response therapy needs more evaluation.
P-344
GENETIC POLYMORPHISMS IN THE GENES ENCODING HUMAN INTERLEUKIN-7 RECEPTOR-ALPHA: IN BONE MARROW TRANSPLANT RECIPIENTS

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Interleukin-7 (IL-7) is essential for T-cell development in the thymus and for the maintenance of peripheral T cells. IL-7 signals through IL-7R, which consists of the gamma c-chain and an alpha-chain. Sequencing of IL-7R alpha has revealed the existence of four single nucleotide polymorphisms (SNPs) (+510C/T, +1237 A/G, 2087T/C and +3110A/G), which all give rise to amino-acid substitutions. The aim of the present investigation was to evaluate the significance of IL-7R alpha SNPs for the outcome in bone marrow stem cell transplantation (SCT). IL-7R alpha polymorphisms were determined in 105 recipients from either matched sibling donors (40 patients) or autologous bone marrow transplants (66 patients). During 90 days follow up nine patients died (8.5%) and 23 patients had aGvHD (Grade I-III). None of the four IL-7R alpha genotypes polymorphisms of the recipient was significantly associated with the outcome of SCT. Additional studies with larger sample are necessary to further define the influence of IL-7R alpha on the immune response after BMT.

P-345
DIALYSIS ADEQUACY (KT/V) AND OPTIMAL RESPONSE TO ERYTHROPOIETIN (EPO) IN PATIENTS WITH ESKD ON MAINTENANCE HEMODIALYSIS

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The effect of adequacy of dialysis on the response to erythropoietin (Epotin®, Julphar’s rHuEpo) therapy is still incompletely understood because of many confounding factors. We investigated via post hoc analysis the relationship between KT/V and response to Epotin® in 79 stable thrice-weekly hemodialysis patients enrolled into a multicenter, multi-national open study. Patients were divided according to their KT/V into group A where KT/V > 1.2 (n=39) and group B with KT/V < 1.2 (n=40), both groups were with equivalent baseline value of Hct% (23.6 + 3.5) vs. (22.7 + 3.9) respectively (P=0.27), also for the main rHuEpo response influential factors including demographic criteria, iron profile, PTH and CRP. Epotin® was given intravenously at an initial dose of 150 IU/Kg/week, in 3 equal doses after dialysis and titrated thereafter according to Hct% response. All the influential factors including dosage and iron status were monitored according to the K-DOQI guidelines. In the 3-month period, Epotin® increased Hct% level significantly in both groups, to reach (37.0 + 4.8) in group A, and (34.0 + 5.1) in group B. However, the average increment in group A was higher (13.4 + 5.2) vs. (10.9 + 4.1) in group B, P value < 0.05. It was concluded that in patients with ESKD on maintenance hemodialysis, KT/V affects the patient’s response to rHuEpo therapy.
Renal transplantation is increasingly being carried out in older patients, with generally acceptable results. Because we have an increasingly aging population, we retrospectively reviewed the results of renal transplantation in patients over 60 years of age at our center. A retrospective study was conducted of 212 Bahraini patients receiving renal transplants from January 1979 to December 2007. All medical records were reviewed for demographic data, graft function and survival. Patient and graft survival was compared for patients above and below the age of 60. Seventeen patients >60 years with a mean age of 64.1±3.6 years at the time of transplantation. Sex: 76.5% Males. Diabetic nephropathy (52%) and PCKD (12%) were the most common causes of ESRD. Mean donor age was 26±6 years and most of them were unrelated (82%). Follow-up was until death or until 1/3/2008. Of the 17 study patients, 4 died: 3 with a functioning graft, 1 within one year of transplantation. Cardiovascular causes (3 patients, 75%) and infections (1 patient, 25%) were most common. Common causes of graft loss were death with a functioning graft (4) and chronic rejection (1). Univariate analysis of risk factors showed pre transplant hypertension and diabetes mellitus significantly (p < 0.05) affected time of return to dialysis. Multivariate analysis did not show these independent variables to be significant. After censoring patients that died with functioning grafts, difference in graft survival between >60 and <59 years was not significant (p>0.2). In this study, 92% of older patients had allografts functioning at 1 year. In conclusions, the fact that older patients succumb over time from natural causes should not keep patients from transplantation. Immunosuppressive agents need to be limited to reduce the incidence of infection. Criteria need to be refined to define those who are at prohibitive risk, who may not be candidates for transplantation.

Guillain-Barre Syndrome (GBS), also known as acute inflammatory demyelinating polyradiculoneuropathy, is characterized by rapid-onset weakness, hyporeflexia or areflexia, and elevated levels of protein in the CSF without pleocytosis. Case report: A 27 years-old Asian-male with end-stage renal disease as a result of reflux nephropathy underwent living-unrelated donor renal transplantation. Maintenance therapy included Cyclosporin, prednisolone and Mycophenolate mofetil. The patient was discharged with a serum creatinine levels 1.5mg/dl. Four months late, the patient was admitted again with fever, malaise, and weakness, all of which had started three days after upper respiratory tract infection. Two days after hospitalization, he developed bilateral lower extremities weakness, then it rapidly progressed to upper extremities. The patient had normal mental status, and cranial nerves were intact. Absence of tendon reflexes was noted. No disturbances of autonomic function was noted. Decreased force of lower extremities and gait disorder was determined.

Laboratory findings were as following: WBC=7000, Hb=8.3, BUN=28, Cr 1.8, Ca=8.4, P=3.5, Na=141, K=4.2, LDH=245, CPK=8.1, urinalysis: PH=6, Pro=1+, sugar= -, blood=3+, RBC=many, WBC=14-16, CMV Ag (PP 65) was positive (20/50000). Nerve conduction velocity result showed: Acute demyelinating polyneuropathy compatible with GBS. CSF analysis was not done. Intravenous gancyclovir was started and during therapy muscle weakness was improved, but didn't respond completely. According to neurologic consultation plasmapheresis was started due to gait difficulty, although the patient did not have swallowing difficulty or respiratory problems. After four sessions of plasmapheresis his symptoms dramatically improved, and he was discharged from hospital. The Guillain-Barre syndrome associated with CMV infection is a recognized entity of unknown pathogenesis. In two-thirds of such cases, the syndrome follows an episode of upper respiratory tract infection. Based on literature review, only11cases of GBS have been reported. In 9 patients GBS was attributed to CMV infection and in the tenth patient to cyclosporin A neurotoxicity and in eleventh patients attributed to C jejuni. GBS is believed to be caused by autoimmune mechanisms that are predominantly T-cell mediated. This case suggests that the onset of the GBS after renal transplantation could be related to cytomegalovirus infection. Therefore early diagnosis and treatment of CMV infection and also considering plasmapheresis in especial cases are strongly suggested.
P-348
CENTRAL GIANT CELL GRANULOMA IN A RENAL TRANSPLANTATION PATIENT

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Giant cell granuloma is an uncommon bone lesion, which has slightly different histopathologic characteristics and a more benign clinical course than giant-cell tumors. The Brown tumor of hyperparathyroidism is histologically identical to this lesion; therefore, patients with giant-cell granuloma should be evaluated for parathyroid disease. We present a renal transplant recipient, who had developed eroding intranasal and generalized masses of giant cell granuloma eight years following transplant. A 46-year-old women developed intranasal lesion eight years following renal transplant. The MR imaging study showed lobulated high signal mass at the right nasal cavity with extension upward and invasion into the right ethmoid bone and marked contrast enhancement. An eroding, contrast-enhanced lesion was also found at odontoid. Four years later, her chest CT scan showed multiple expansive bony lesions with sclerotic margin in the ribs and right clavicle. The histopathologic studies of intranasal and right clavicle lesions were identical and compatible with giant cell granuloma. Markedly elevated parathyroid hormone led us to the diagnosis of brown tumor of hyperparathyroidism. To the best of our knowledge, the present case is the first report of brown tumor in a renal transplant recipient who presented with intranasal lesion. We suggest that clinicians should consider brown tumor of hyperparathyroidism as a potential cause of giant cell lesion in renal transplant recipients.

P-349
KIDNEY TRANSPLANTATION IN ESRD PATIENTS WITH ULCERATIVE COLITIS

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Ulcerative colitis (UC), an idiopathic disease with a likely immunological basis, is characterized by a lifelong chronic course with remissions and exacerbations. The combination of UC and end stage renal disease (ESRD) is uncommon. Immunosuppressive drugs, which are used after kidney transplantation, are considered as effective therapeutic alternatives for UC. We report two cases that had long term and symptomatic UC, confirmed by histological examination, before kidney transplantation. Clinical remission occurred immediately after operation, and they had no symptoms of ulcerative colitis during follow up periods (3 and 8 year). Their Immunosuppression regimens are cyclosporine, azathioprine/mycophenolate mofetil and prednisone. We think the improvement of UC in our patient can be attributed to using the immunosuppressive drugs, which have become the mainstay of therapy for the inflammatory bowel diseases. Kidney transplantation is a well-accepted treatment for patients with the inflammatory bowel diseases and end-stage renal disease.
P-350
ARE SCD30, IL-4 & IL-10, IMMUNOLOGICAL INDICATORS OF ACUTE REJECTION BEFORE KIDNEY TRANSPLANT?

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Acute rejection is the most critical post-kidney transplant complication occurring in approximately, 30-50 % of recipients. In this study we analyzed some immunological indicators namely sCD30, IL-4, IL-10 that may help in predicting acute rejection before the operation. Eighty pre-transplant patients’ sera were collected from the Immunology Laboratory Hamad Al-Essa Kidney and Organ Transplant Center at Sabah Hospital in Kuwait, and analyzed in the Immunology labs of the Arabian Gulf University and the Salmaniya Medical Complex in Bahrain. The study populations were divided according to biopsy findings into forty acute rejection group (AR), and forty no rejection (No-R) group. The sera of both populations were analyzed for sCD30, IL-4, IL-10 using commercial ELISA kits. Five patients of AR group and six in No-R group had very high sCD30 but with no significant difference, yet according to Banff criteria 4 with tubulointerstitial rejection, and 36 with vascular rejection had detectable levels with a higher mean value in the later. IL-4 was not detectable in any of the 80 sera, while 3 patients had positive IL-10 serum levels in AR group and 3 in No-R group. The data of the present study suggest that pre-transplant sCD30, IL-4, IL-10 could not be used as immunological indicators to predict the acute rejection event.

P-351
THE EFFECT OF CATALASE ENZYME IN HYPEROXIA-INDUCED PRECONDITIONING AGAINST RENAL ISCHEMIC DAMAGE IN RATS

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Oxygen pretreatment could induce ischemic tolerance in rat renal tissue. In the present study, the role of renal antioxidant systems in induction of this preconditioning phenomenon was investigated. Adult male rats were divided into 3 groups. The rats in O2+IR group were pretreated 1h/day for 5 days with ≤95% oxygen and rats in sham and IR groups with normal air. After anesthesia and right side nephrectomy, the left renal artery was closed by a clamp for 40min. Ischemia was not induced in sham group. The urine was collected for 24h and at the end of this 24h period blood and kidney samples were taken. Data are expressed as median(range). Oxygen pretreatment led to significant improvement of creatinine clearance and factional excretion of sodium. The activity of catalase (U/mgPr) in O2+IR [40(37-45)] group was significantly greater than IR [34(30-39)] group but not different from sham [40(32-53)] group. Super oxide dimutase activity in sham group was lower than other 2 groups and these 2 groups had no significant difference in this regard. Ischemia-reperfusion led to significant elevation of renal malondialdehyde level (lipid peroxidation marker, nmol/mgPr) in IR group in comparison with sham group [20(16-24) vs. 13(10-18)]; but malondialdehyde level in O2+IR [13(10-17)] group was lower than IR group and not different from sham group. In conclusion, ischemia-reperfusion leads to oxidant injury of renal tissue and oxygen pretreatment could lead to reduction of lipid peroxidation and renal ischemic damage probably due to increased catalase enzyme activity.
P-352
OPTIMIZING THE HAEMATOPOIETIC RESPONSE TO EPOTIN® ON MAINTENANCE HAEMODIALYSIS END STAGE KIDNEY DISEASE PATIENTS
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Recombinant human erythropoietin (rHuEpo) has revolutionized the management of renal anemia and has significantly improved patients’ quality of life. Great attention has been paid lately how to optimally use this potent anti-anemic agent. Aiming to overview anemic patients management with Epotin (Julphar’s rHuEpo) according to the new guidelines. Anemic (Hb< 11 g/dL) ESKD patients (n=35) with age > 18 years, iron replete (TSAT ≥ 20% and serum ferritin ≥ 100 mcg/L), and with no serious inflammation (CRP less than 30 mg/l) on thrice weekly haemodialysis were included in the study. Mean age and dialysis durations in years were 50.8 ± 17 and 3.8 ± 2.8 respectively. 88.6% (n=31) patients were de novo patients on corrective phase with no previous exposure to erythropoietin. All safety-efficacy influential parameters were monitored and showed insignificant changes throughout the study 4-month period, including iron profile that was maintained according to K-DOQI guidelines. Efficacy parameters revealed a significant increase (P value <0.0001) of Hb levels from baseline of 8.5 ± 1.0 to 11.1 ± 1.1. Targeting an absolute increase of 2.5 g/dl in Hb throughout 3 months of the study period resulted in 90.3% success rate. Safety wise, no dropouts were recorded due to intolerance, while all the recorded adverse events were classified as unrelated to the test product. In conclusion, Epoitin® is clinically effective to correct and maintain Hb levels, in ESKD anemic patients on maintenance haemodialysis, within the current recommended range and with a satisfactory safety profile in line with what is reported internationally.

P-353
RENAI TRANSPLANTATION AND IDIOPATHIC THROMBOCYTOPENIC PURPURA
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Immune thrombocytopenic purpura (ITP) is a clinical syndrome in which a decreased number of circulating platelets (thrombocytopenia). The combination of ITP and chronic kidney injury is uncommon. We present two cases of kidney recipients from unrelated donors in women who had prior chronic refractory ITP. In adults with the chronic form of ITP, women are affected more frequently than men, such as our patients. Intravenous infusion of antithymocyte globulin (ATG) was done before their operation as induction therapy and the maintenance immunosuppressive regimen included cyclosporine, mycophenolate mofetil/azathioprine and prednisone. Kidney transplantations were safely performed without any complication such as hemorrhage during and after the operation. The platelet count of our patients increased gradually after the surgery and complete remission was achieved. During the 3 and 8 -year follow up period in our recipients, the graft function was well maintained. Renal transplantation in a patient with ITP is suggested with a well-designed approach to avoid potential complications. We speculate that immunosuppressive agents, especially cyclosporine, may result in safe platelet counts and resolve thrombocytopenia in our cases with refractory ITP prior transplantation. Cyclosporine therapy after kidney transplantation seems to be a reasonable treatment in cases of ITP that do not respond to standard managements.
Antibody response to pneumococcal capsular polysaccharide vaccine in renal transplant recipients

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Renal transplant recipients or patients on dialysis have a greater risk to infections, and possibly have a reduced response to vaccines. The aim of this study was to determine the antibody response to the primary vaccination of 23-valent pneumococcal capsular polysaccharide vaccine (PPV23) in renal transplant recipients who received immunosuppression therapy. A total of 66 patients with renal insufficiency, who referred to a single center for renal transplantation, were enrolled to this prospective study. A group of healthy subjects (including 40 individuals) were served as the control. All patients and individuals in control group received a single dose of unconjugated pneumococcal polyvalent vaccine intramuscularly and serum samples were obtained prior to, 4 weeks and 3 months respectively after the vaccination. Specific antibodies against whole pneumococcal antigens were measured using enzyme-linked immunosorbent assay. The results showed that among 66 vaccinated patients with renal insufficiency, 14 (21%) patients were found to be hyporesponsive to polysaccharide antigens. In this group of patients with reduced IgG response, the geometric mean titer of pre-immunization, post-immunization and absolute increase of antibody levels were significantly lower than those patients with normal antibody production. No significant differences were detected in specific antibody levels to S. pneumoniae between healthy control subjects and renal transplant recipients when patients with reduced IgG response were excluded. The majority of renal allograft recipients undergoing treatment with immunosuppressive drugs showed an antibody increase after vaccination, however, the antibody response in this group was weaker than the control group. The results suggest that the currently available 23-valent pneumococcal polysaccharide vaccine is effective to produce a significant immune response in renal transplant recipients, and immunosuppressive therapy including prednisone, Cellcept and Sandimmune may reduce the antibody responses following pneumococcal vaccination but do not significantly impair the antibody response.

Endourological procedure for the management of urinary calculi in transplanted kidneys

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Progressive development of endourological procedures has revolutionized the management of urolithiasis in transplanted kidneys. In this article we report our experience in endourological procedures for treatment of calculi in transplanted kidneys. Between 1989 and 2008, 1300 renal transplantation were performed in our center. 18 cases (14 adults and 4 children) with calculi (6 pelvic and 12 ureteral stone) were treated by ESWL, TULP and PCNL. We follow up the patients by ultrasonography every 3 months for 2 years and then once yearly. Incidence of calculi in transplanted kidney in our center is 1.3%. Kidney stone size varied between 12 – 18 mm and in ureteral 6 – 10 mm. Success rate of becoming stone free by ESWL was 75% (4/6) by PCNL 100% (3/3) and TUL 80% (8/10). 3 patients require several modalities for treatment, in these patients at first we performed TUL and pushed the stone into the pelvic and then performed ESWL. Two of them did not respond to this treatment so they were treated by PCNL. At a mean range follow up of 58 months all cases were stone free. 3 cases lost their graft due to chronic rejection but in 15 cases renal function was good and no recurrence of urinary calculi was reported. In conclusion, although urinary tract calculi in transplanted kidney are rare but must be considered in follow up of recipients. Endourological procedures for treatment of calculi in transplanted kidney are safe and effective and preclude the need of open surgery.
P-356
ALLOGRAFT RENAL REJECTION AND CHEMOKINE POLYMORPHISMS IN TUNISIAN PATIENTS


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Chemokines play a major role in the process by which leukocytes are recruited from the bloodstream into sites of inflammation. Genes for the chemokine receptors CCR5, CCR2 and MCP-1 are characterized by functional polymorphisms implicated in transplant rejection. To investigate this association, we have analyzed polymorphisms of CCR5-CCR2-V64I and MCP-1 G/A (-2518) in 173 renal transplant recipients and 169 healthy blood donors. The patients were classified in two groups: G1 included 33 HLA-identical recipients and G2 included 140 one or more mismatches graft recipients. Forty-one patients had developed acute rejection episode (AR): 7 in G1 and 34 in G2. Thirteen group 2 patients developed chronic allograft dysfunction (CAD). The genotypic and allelic frequencies of all polymorphisms studied, did not reveal significant differences between patients and controls, and among G1 and G2 recipients. However, a significant risk of acute renal transplant rejection was found in G1 patients who possessed the CCR2-64I allele (odds ratio 0.24, 95% confidence interval [CI], 0.05 to 1.06; p = 0.035). While, there was no significant association of this polymorphism and CAD. In conclusion, the observed association of CCR2-64I with AR should be added to the spectrum of immunogenetic factors known to be involved in allograft renal loss.

P-357
WRITING FOR PUBLICATION WORKSHOPS IN TRANSPLANTATION: AN OPPORTUNITY FOR MESOT COUNTRIES

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Medicine and Health Promotion Institute and Iranian Scientific Writing Network have held 12 days “Writing for Publication Workshops” for faculty in year 2007. Here we describe the workshop curriculum and reports evaluation results. First, through interview, writing skills were assessed in participants immediately prior to workshop to identify knowledge and skills. A databank then was selected from which, several paper titles could be selected. Each faculty member selected one topic and during the workshop sessions, papers were being written, by the hands of faculty members but with the supervision and feedback by trainers. The outcome of this workshop not only was improvement in skills and satisfaction of the faculty members, but also was the numerous publications submitted to journals. RESULTS: 12 individuals participated in the workshops given during the 2007-2008 period. Pre/post self-assessment data indicated significant increases in perceived knowledge and skill in all areas of assessment. The follow-up interview data showed that participants felt that the workshop motivated them to begin and sustain writing projects, gave them skills that made their writing more effective, and demystified the submission and publication processes. Most papers (written during workshop) submitted by participants accepted for publication showed a good rate of publication. CONCLUSIONS: The evaluation findings indicate that the Writing for Publication Workshop met its educational objectives in non-transplantation medicine. The same workshops to prepare transplantation faculty as medical writers can be implemented by MESOT countries to improve publication productivity and quality.
As the population ages, clinicians have seen and will continue to see elderly patients suffering from end-stage renal disease (ESRD) requiring renal replacement therapy. There were limited studies in the MESOT countries for determining the influence of recipient age on outcome after renal transplantation. We therefore retrospectively reviewed the medical records of two center databases to ascertain the clinical outcome of live kidney transplantation in elderly patients. This study involved 380 kidney allograft recipients (259 men and 121 women), transplanted between September 1986 and January 2007. Recipients were defined as "elderly" if they were 60 years of age or older. The most common cause of ESRD was diabetes mellitus, followed by hypertension. The mean ages of recipients and donors were 69 ± 8 and 27 ± 7 years, respectively. The majority of patients received living unrelated donor (LURD) kidneys (82.9%). The median serum creatinine level of our patients in the last visit was 1.56 mg/dL. The clinical outcome was promising in studied elderly patients, the occurrence of graft loss was only 15.3 % (n=58) and 9.7 % (n=37) of cases died in the follow up period. The prevalence of hepatitis B and C among our recipients were low, HBsAg and HCV antibody were only positive in 5 (1.3%) and 11 (2.9%) of cases, respectively. In conclusion, our results confirm that renal transplantation should be considered for selected patients older than 60 years requiring renal replacement therapy.

Nowadays organ transplantation is the best treatment for progressive organ failure. This can increase the importance of organ procurement. It seems that attitude toward transplantation has an effect on people's satisfaction. Moreover groups related to transplantation, like physicians should be familiar to transplantation rules & standards. So it seems that understanding the knowledge and attitude of this group, can be so effective in transplantation center politics. In this cross-sectional study, 560 physicians including nephrologists, urologists and internists entered. They filled out questionnaires and then we analyzed data in SPSS software. In 560 physicians, 435(78%) had positive attitude toward organ donation after death but only 140(25%) had positive attitude to organ donation in living time. The most reason between agreeables was "helping people" while the most cause of unfavorable physicians was "respecting & maintaining body". Complete knowledge to transplantation rule was just in 51(9%) physicians & 32(6%) also didn’t have any knowledge. Knowledge of transplantation theoretical and financial basics was in 265(47%) & 221(40%). In conclusion, there is good attitude towards organ transplantation between physicians while their knowledge of transplantation rules, theoretical and financial basics, is less than half so it needs programs to increase knowledge of physicians.
P-360
NONMELANOMA SKIN CANCER FOLLOWING LIVING UNRELATED KIDNEY TRANSPLANTATION: A RETROSPECTIVE STUDY OF 7850 CASES

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Long-term immunosuppressive treatment for adequate graft function results in suppression of the antitumoral function of the immune system and seems to attendant the generally increased risk of various tumors especially non-melanoma skin cancers (NMSCs). In view of this, we conducted a descriptive study to assess clinical and histological features of nonmelanoma skin tumors in 7850 recipients who received allografts in 6 transplant centers between 1984 and 2007. NMSCs were found in 0.4% (n=33) of the renal transplant recipients, among them the most common types were Squamous cell carcinomas (22 cases, 66.6%), and Basal cell carcinomas (11 cases, 33.3%).

The patients consisted of 25 men and 8 women with a mean age of 51 (range 21-71) years and 6 to 211(mean 55±49) months after their transplantation. This large experience indicates that in our setting of kidney transplantation, Squamous-cell carcinoma is the most common kind of NMSCs. Early diagnosis and prompt wide local resection of these tumors are required in order to prevent morbidity and mortality in these patients.

P-361
IMPROVING CONSENT VIA PATIENT SUPPORT GROUPS

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The number of people with Chronic Kidney Disease (CKD) is increasing steadily in Saudi Arabia (KSA), with over 9000 patients on dialysis and many waiting for a kidney transplant. In order to improve the quality of life for patients with CKD donor rates for transplant should be increased. Thus, informed consent for organ donation becomes very important factor. Providing relevant information empowers, educates and enables people with CKD, renal transplant recipients, living organ donors and family members to become effective advocates on issues related to their health. There is a significant challenge in KSA, with families that are reluctant to agree for cadaver or living unrelated donation due to the lack of education, Families personal views and social influence tend to interfere with obtaining consent although donation is religiously accepted in Islam (the religion of Saudi Arabia). Often a family member is willing to donate but the offer is rejected by the patient or other family members. Therefore, because of an extensive waiting time, due to lack of donor consent (living and cadaveric), many patients requiring transplants are willing to go outside KSA, where donors are more readily available, and consequences of the follow up may be significantly undesirable. A support group aimed at educating patients and their families was established. The goal of this group was to increase living related donation rates by education. Previous donors and their families were invited to discuss their experiences and to allow potential donors and their families an opportunity to learn from those who had already been through the process. Outcome of support group

Families started to understand why living related transplantation was a good option; there was an increase in the number of consents for living related donation, and a reported increase in emotional attachment between donor and recipients. Objectives of the support group 1. To educate potential living donors and families regarding The benefits and risks of donation. 2. To provide explanation regarding the need for transplant,The risk and the benefits and follow-up care for all parties After transplantation. 3. To increase the number of living donations by increasing The awareness and understanding of the public. 4. To obtain informed consent for living donation in order to Facilitate the procedure for transplants Team Patient, Physician, Psychologist Nurses, AlliedHealth Worker, Pharmacy, Dietary, Social Worker, Transplant Coordinator, Secretarial Support Process Advertising, Facilities, Culture, Timing, group discussions, Speakers, videos, pamphlets and sponsorship

Conclusion Donation support groups are important for both patients and family’s previous donors and their families are very useful sources of information for both the patients and potential living donors. Increased awareness of the subject of organ transplantation was observed in the well educated groups. Many of these patients and families adopted an unofficial role as advocates for transplantation among their peers. An enhanced emotional relationship between the patient and the donor was noted to be an important additional benefit of Donation Support Group. Donation support groups will be successful if you prepare them well. The question is, if this happens to you, and you need any organ transplant as result of disease, are you going to be grateful to the donor who saves your life or another patient’s life?? In this case, are you willing to get an organ from a donor? If your answer is yes than you have to remember (do unto others as you would others do to you).
AN UNUSAL CASE OF POST TRANSPLANT OSTEOID OSTEOMA

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Post transplant (Tx) tumors are one of the important long term complications of renal transplantation. They may arise denovo, may be transmitted from the donor or may be due to recurrence of a previous tumor. Long-term immunosuppressive therapy increases the risk of tumor 100 times and the risk is correlated with the level of immunosuppression. Various potentially oncogenic viruses also play a major role in causing these cancers. Aside from non-invasive Kaposi sarcomas, increased rate of production of benign tumors has not been observed after renal Tx and as to our knowledge no cases of post Tx osteoid osteoma has been reported so far. Osteoid osteoma is a benign bone neoplasm that occurs typically in the long bones, such as the tibia or the fibula and in about 50% of cases, in the diaphyseal or meta-diaphyseal cortex. It is a relatively common neoplasm, representing about 12% of all primary bone neoplasms. More than 75% of cases present between 5 and 25 years of age and it is rare over the age of 30. The tumor is more common in men with a male-to-female ratio of 2.3:1. Patients with osteoid osteomas typically have pain in the affected bone site, which worsens at night and responds to anti-inflammatory drugs. Here we will present a 49 year old renal Tx male, who presented with increasing bone pain in right upper arm, eight months after renal Tx. Despite an initial normal right humerus X-ray, a raised subperiosteal tumor was diagnosed in the lateral border of the right humerus a few months later. Excisional biopsy was performed and the pathologic report was an osteoid osteoma. The patient’s pain which was resistant to most analgesics, completely disappeared after surgery and he is devoid of any lesions at present, 7 months after excision of the tumor.

SUBSTITUTION OF SANDIMMUN NEORAL® WITH A GENERIC CYCLOSPORINE A MICROEMULSION FORMULATION (SIGMASPORIN MICRORAL®) IN STABLE RENAL TRANSPLANT PATIENTS: CLINICAL EVALUATION RESULTS AFTER 6 MONTHS

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Cyclosporine A is still the most important factor responsible for the survival of solid organ transplants worldwide. Trial objective was to investigate the feasibility and safety of conversion to a generic microemulsion cyclosporine A in stable renal transplant patients maintained on Neoral®. Seventy-five patients were enrolled from 8 centers in 5 Middle Eastern countries and monitored for six months after conversion to Sigmasporin Microral®, and readings at 0, ½, 1, 2, 3, 4.5 and 6 months were recorded including CyA blood level, S. creatinine, uric acid, liver enzymes, lipid profile, serum electrolytes, blood pressure and adverse events. 54 males and 21 females with an average age of 38.9 +10.7 years and transplant age of 30.3 +29.3 months, and maintained on Sigmasporin Microral® average dose of 2.8 +1.0 mg/Kg/day, were found to be stable throughout the study period as reflected by the stable CyA therapeutic blood level of C0 of 181.6 +102.1, C2 of 759.2 +384.4 and absorption profile represented by C2/C0 of 4.9 +2.8, and C2/ CyA dose of 282.3 +128.8. An average s. creatinine level of 116.1 +29.5 µmol/L was recorded denoting stable graft function and liver enzymes did not change significantly throughout the study period. No new onset cases of hypertension, diabetes mellitus or hyperlipidemia among the patients were reported. Grafts’ functions were stable for all patients, except for two incidences of mild acute rejection and two of mild CyA nephrotoxicity, but graft and patients’ survival rates were 100% both. Results of this 6-month study showed that Sigmasporin Microral® is effective in maintaining stable renal functions in kidney transplant patients who had been converted from Sandimmune Neoral®, with similar safety and tolerability profile as reported in the international literature.
A CASE OF EARLY ONSET CYCLOSPORINE-INDUCED HEMOLYTIC UREMIC SYNDROME

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Hemolytic-uremic syndrome (HUS) is a well-recognized and rare complication occurring in renal transplant recipients treated with cyclosporine. Although direct endothelial injury probably plays an important role in this setting, cyclosporine may also increase platelet aggregation. This form of HUS is often, but not always, reversible with discontinuation of cyclosporine. The replacement of cyclosporine with non-nephrotoxic immunosuppressive agents may ameliorate renal dysfunction among patients with cyclosporine-induced nephrotoxicity. We report here about a 37-year-old male renal transplant recipient receiving cyclosporine who developed HUS in the early post-transplant period, which recovered on drug withdrawal and change cyclosporine to sirolimus. This case highlights the need to maintain a high index of suspicion in postoperative patient with anemia that resistance to erythropoietin therapy. Also in cases of acute graft deterioration with hemolysis and thrombocytopenia, cyclosporine should be stopped and other alternative immunosuppressants should be given.

RECURRENT EPISODES OF ACUTE RENAL FAILURE AFTER KIDNEY TRANSPLANTATION: RHABDOMYOLYSIS

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A 38 years old man with small kidneys and unknown origin end stage renal disease was hemodialysed for about 8 years. He took kidney transplantation from a living donor. Two weeks after transplantation his general condition was good and creatinin level reduced to 0.9 mg/dl. One year later he had recurrent episodes of acute renal failure (ARF) and urine output reduction and hospitalized frequently. Approaches for allograft rejection, cyclosporine toxicity and other urologic complications of kidney transplantation were done and results were negative. At last during history taking we found that his problems were often after vigorous exercise, so muscular disorders suspected and EMG, NCV and muscle biopsy was taken and diagnosis of McArdel disease was documented (McArdel disease is a glycogen storage disease) which may lead to rhabdomyolysis and then ARF. It is rare but we emphasize that muscular disorder like GSD and especially McArdle disease may lead to ARF and may affect clinical course of kidney transplantation. Vigorous physical and muscular activities were restricted, drinking of enough water and protein rich diets were advised. Medication was not prescribed. After three years he has not any muscular cramps, weakness, fatigue and symptoms of ARF.
EARLY VERSUS LATE POSTTRANSPLANT LYMPHOPROLIFERATIVE DISORDERS AFTER RENAL TRANSPLANTATION

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Post-transplantation lymphoproliferative disorder (PTLD) is a rare but devastating and often fatal complication that occurs in renal transplant recipients. We enrolled PTLD occurring in 7450 kidney recipients at 5 transplantation centers from 1984 to 2008 to assess the incidence, clinical features at presentation, clinical outcome, response to treatment, patient and graft survival, and risk factors for early-onset (< 1 year) versus late-onset (> 1 year) PTLD. Baseline immunosuppression consisted cyclosporine, mycophenolate mofetil (MMF)/AZA and prednisolon +/- anti lymphocyte globulin (ALG). Of the 7450 patients (51.3% male), 39 (0.52%) who developed PTLD with the mean age of 40 (19-66) years. Early and late PTLDs were developed in 9 and 27 recipients, respectively. There were no statistically significant differences between the two groups in terms of sex, age, immunosuppression with anti lymphocyte globulin (ALG), acute rejection, patient and allograft survival, CMV infection and response to therapy. Hodgkin lymphoma was only seen in two cases with late PTLD. One year patient survival, from the diagnosis of PTLD, was 60% and 61% in early and late PTLD groups, respectively. There was significant correlation between immunosuppression regimen and occurrence PTLD (i.e. MMF was predominated in early PTLD patients). Although early-onset PTLD have been frequently reported a favorable outcome, our study showed that early and late-onset PTLD have the same outcome.

ASSESSMENT OF SEXUAL FUNCTION (LIBIDO, POTENCY, FERTILITY) IN PATIENTS BEFORE AND AFTER RENAL TRANSPLANTATION

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Chronic renal failure and treatment with hemodialysis may culminate into sexually disability, oligospermia, germinal cells dysphasia, and delayed sexual maturity. After a renal transplant, improvement in these patients’ libido, potency, and orgasm are observed. This article attempts to evaluate libido, potency, and fertility in these patients. 100 male patients at Imam Reza Hospital in the renal transplant unit, who had or were going to undergo kidney transplant, were selected. The minimum age was 18 and the maximum was 61 with the mean age of 38.6 years. The most prevalent causes of chronic renal failure were diabetes mellitus (16%) and unknown (22%). Of these, 98% had been undergoing hemodialysis before the renal transplant and 2% peritoneal dialysis. 90 cases had received kidneys from unrelated living donors and 10 cases received kidneys from related living donors. 92 cases had their first kidney transplant and 8 cases had their second due to transplant rejection. After the transplantation 36 cases received double drug therapy and 64 had triple drug therapy. Out of 100 patients: 16 were single and 84 were married (12 were renal failure before marriage). Before the transplant the libido was good in 22 cases, moderately good in 48, and poor in 21 cases (impotent). After the transplant the libido improved, 76 cases were good, moderately well in 16 and poor in 4 cases. Fertility improved and in 27 cases conception culminated into a live birth. Prior to the transplant 15 patients had no children. In conclusion kidney transplant not only improves and increases the quality of life and health of patients with chronic renal failure which compromises the libido, potency and fertility but also improves libido, potency, and fertility and this may bring more satisfaction couples.
P-368
VAScular complications after 1500 consecutive live and cadaveric renal transplantations: a single center study


All kidney transplant surgeons should be familiar with vascular complications of kidney transplantation. The purpose of this study was to document vascular complications following cadaveric and living kidney transplants in order to assess the overall incidence of these complications at our center and to identify possible risk factors. In a retrospective cohort study, 1500 consecutive renal transplanted patients who received alive or cadaveric kidneys between December 1988 and July 2006 in a regional transplant center were evaluated. The anatomy and number of renal arteries and the incidence of vascular complications were found from color doppler ultrasonography studies, angiographic investigations, or explorations. Clinically apparent vascular complications was seen in 8.86% of all patients with renal transplants (n=133). The most frequent vascular complications were formed by hemorrhage (n=91; 6.1%) followed by renal arterial stenosis (n=26; 1.7%), renal artery thrombosis (n=9; 0.6%), and renal vein thrombosis (n=7; 0.5%). Recipients from cadaveric sources suffered from vascular complications more frequently than recipients from live donors (12.5% vs. 7.97%; p=0.017). The rate of vascular complications was significantly higher among recipients of renal allografts with multiple arteries rather than single arteries. (12.3% vs. 8.2%; p=0.033) The same was true regarding venous variation. (25.4% vs. 8.2%; p<0.000). In conclusion, vascular complications were more frequent among allografts with multiple renal vasculatures. The performance of live donor transplantation as the main procedure leads to lower incidence of vascular complications after renal transplantation.

P-369
ORIgination angle of renal artery haven’t any role in renal artery early branching or accessory artery presence

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During the present study, we evaluated the effect of renal artery emergence angle on branching pattern and renal artery length. During a cross-sectional study from August 2005 to May 2007, 104 patients underwent contrast-enhanced 64 MDCT renal angiography in Tabriz Imam Khomeini Hospital. The number of arteries, number of branches, presence of accessory artery, early branching, first RA branch origination from aorta (Delta-D) and emergent angle of renal artery from aorta in horizontal section (Delta-A) were assessed. 103 patients’ data analyzed with 65/37 male to female ratio. The mean of age was 31.42±16.96 years. The mean value of aorta diameter, angle of renal artery emergence in coronal section, renal artery diameter and distance to first branching were respectively, 1.55±0.25 cm, 56.43±15.28 degree, 0.61±0.11 cm and 3.39±1.54 cm. There was not significant difference between right and left kidney arteries diameter and distance (0.61±0.11 vs. 0.62±0.11, 3.54±1.82 vs. 3.25±1.18). There was not any correlation between angle of RA emergence and RA Delta-D and RA diameter. There was early branching in 34 arteries (16.7%). Also accessory artery was presented in 53 kidneys (26.3%) that 23.8% kidneys had single and reminder (2.5%) had double accessory artery. In evaluation of relations of RA DeltaD, diameter and DelatA with early branching and accessory artery presence, we could not find significant difference. In conclusion, angel of RA origination from aorta in horizontal section doesn’t affect RA distance to branching or diameter and also haven’t any role on early branching or accessory artery development.
P-370
EVALUATION OF GROWTH AND BODY MASS INDEX IN CHILDREN FOLLOWING KIDNEY TRANSPLANTATION

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Children with chronic kidney disease are often growth retarded. Most of the children have good weight gain after successful kidney transplantation but height gain is not satisfactory mostly for children who are transplanted in older age. This study was conducted for evaluation of growth and BMI in children following kidney transplantation. All children who had been transplanted in our center and had regular follow up were encountered in this study. Those with primary non-functioning grafts were excluded from the study. Weight and height at transplantation and at their last visit were recorded and for those with ages lower than 20 years WHOPercentile curves of BMI were used for evaluation and those older than 20 were evaluated according to normal adult values. SPSS 15.1 software and paired T-Test were used for comparison of means. One hundred and thirteen children were involved in this study. Mean age at transplantation was 13.2 ± 5.6 ranging from 3 to 22 years and age at last visit was 18.3 ± 4 years. They had been followed from 6-180 months (Mean 61 ± 38 months). Their primary renal diseases were as follow: Reflux-obstruction dysplasia 47, hereditary 36, glomerular disease 22, unknown and missing 7 and stone 1. Mean pre-transplant body weights, height, BMI were significantly different from post-transplant values: 31 ± 11 kg, 135 ± 20 cm, 17 ± 3.5 kg/m² vs. 46.6 ± 12.6 kg, 151.5 ± 12.5 cm, 20 ± 3.95 kg/m² (p<0.001). Latest serum creatinine was 1.24 ± 0.6 mg/dl ranging from 0.5-4.1 mg/dl. Pre and post-transplant percentiles of BMI were significantly different (33.6 ± 34 vs. 40 ± 31) p<0.001. We can conclude that despite short period of follow up kidney transplantation has a dramatic effect on growth and BMI of children.

P-371
UROLOGIC COMPLICATIONS AFTER RENAL TRANSPLANTATION

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We sought to explore the incidence, risk factors, clinical presentation, management options, and outcomes of post renal transplant urologic complications. Between June 1986 and December 2005, we performed 348 renal transplantation (Charles Nicolle Hospital Tunisia). Kidney grafts were obtained from 277 living and 71 cadaveric donors. The medical records were retrospectively reviewed for urologic complications. Urologic complications were detected in 26 recipients (7%) they had received kidney grafts from 10 living and 16 cadaveric donors. Urologic complications were ureteric strictures in 4, urine leaks in 17, and stone in 5 recipients (ureteral in 1, bladder in 2 and pyelic in 2). In conclusions, post transplantation urologic complications are associated with a good prognosis if diagnosed early and properly treated. Percutaneous transluminal dilatation of ureteric stenosis in renal transplant patients has good initial success, low morbidity, few recurrences, and long-term effectiveness.
Renal transplantation has become an established treatment modality for end-stage renal disease (ESRD) in children, which may allow normal growth and development and enables children to return to a normal lifestyle. In addition, the potential for complications after renal transplantation is far greater in children than in adults. This study was designed to determine the clinical outcome of kidney transplantation in pediatrics. We retrospectively reviewed the medical records of pediatric kidney recipients who received a living kidney transplant at two renal transplantation centers in Tehran, Iran, between November 1985 and November 2006. Recipients were defined as "pediatric" if they were 18 years of age or younger. Our study involved 539 pediatric recipients (58.1% male and 41.9% female). The mean age of recipients and their donors were 13.5±3.7 and 27.5 ± 5.8 years, respectively. The median patient follow up was 34.4 (0.3 - 226.8) months. The common cause of ESRD was glomerulonephritis (33.1%), followed by urological problems (30.5%) and congenital disorders (9.1%). The majority of patients had a living unrelated donor (80.7%). The prevalence of hepatitis B and C among our recipients was 1% and 4.4%, respectively. The mean of last serum creatinine level was 1.7 ± 1.4 (range 0.2-10.6) mg/dl. One, five, ten, fifteen and eighteen-year patient survival rates were 92%, 88%, 84%, 63%, and 63%, respectively. Also, One, five, ten, fifteen and eighteen-year allograft survival rates were 77%, 57%, 41%, 23%, and 15%, respectively. Our study showed that kidney transplantation is promising in children requiring renal replacement therapy.
FUNGAL INFECTIONS IN LIVING RENAL TRANSPLANTATIONS: A REVIEW OF 5950 RECIPIENTS

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Organ transplant recipients, on long-term immunosuppressive therapy, are at increased risk for life threatening opportunistic fungal infections. The incidence of these rare infections has increased considerably over the last decade. In order to evaluate the incidence of invasive fungal infections and to identify the most common fungal pathogens, we conducted a multi-center retrospective study on 5424 ESRD cases undergone living kidney transplantation in four transplant centers between 1984 and 2008. Data gathered included age, sex, date of transplantation, total number of operations, immunosuppressive regimen, graft rejection episodes, date of diagnosis, fungal pathogen, organs affected by infection, treatment and patient’s outcome. Invasive fungal infections developed in 21 recipients (0.35%), 18 male and 3 female. Their immunosuppression was cyclosporine based. The mean age of patients was 49±10 (ranged from 32 to 67) years. Diagnosis was made by radiological findings, positive blood or bronchoalveolar lavage (BAL) cultures and tissue biopsies. Mucormycosis was the most common cause of opportunistic fungal infections in population studied (n = 10), followed by aspergillosis (n = 3), disseminated candidiasis (N = 4), nocardiosis (N = 2) and histoplasmosis (n = 1), Pulmonary involvement was dominant (50%). Renal transplant recipients with invasive fungal infection did not experience more graft loss. The treatment modalities were successful in only 9 patients and the rest died of disseminated infection. In our large series of kidney transplant recipients, mucormycosis was found to be the most common cause of invasive fungal infection. Prompt diagnosis and treatment are necessary to avoid the life threatening complications and may greatly improve prognosis.

GENOTYPING OF HCMV-UL73 GENE AND MONITORING OF HCMV INFECTION IN KIDNEY TRANSPLANT RECIPIENTS

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Kidney transplantation is a therapeutic protocol in different types of renal dysfunction. Viral agents like Human Cytomegalovirus (HCMV) which has the potential of latent and/or active infection in transplant recipients are the most important risk factors that threatened the surveillance of these patients. In this research, the prevalence and role of HCMV infection in clinical outcome of transplanted kidney are determined. Also the genotypes of HCMV-UL73 gene and the HCMV related laboratory findings are analyzed in kidney transplant patients. In this cohort and retrospective study, EDTA treated blood (plasma and leukocyte) and urine samples were collected from 40 kidney donors and recipients' pre, and post-kidney transplantation. The HCMV active and/or latent infection were analyzed by Semi-nested PCR method and antigenemia test for these samples. The UL73 gene genotypes and HCMV risk factors were studied in these recipients. HCMV positive PCR results were detected in leukocyte (45%) and plasma (52.3%) samples of kidney recipients' pre, and post-transplantation, respectively. HCMV active infection was not detected in kidney donors by antigenemia method. Significant correlation was defined between positive results of leukocyte-PCR and antigenemia test (p=0.02) pre-kidney transplantation in recipients. Also a positive correlation was determined between HCMV leukocyte and plasma-PCR positive results with the presentation of HCMV active infection. The gN-3a genotype was the dominant genotype of HCMV -UL 73 gene in renal transplant patients. In conclusion, considering the statistical correlation of HCMV disease with renal dysfunction in these transplant recipients and for positive correlation of laboratory findings with HCMV active infection or disease, management and monitoring of diagnosis and treatment of HCMV infection is needed in kidney transplant patients.
MOLECULAR INCIDENCE OF INVASIVE FUNGAL INFECTIONS IN SOLID ORGAN TRANSPLANTATION IN SHIRAZ TRANSPLANT CENTER

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Invasive fungal infection has become the leading cause of death after transplantations. Serious fungal infections may cause 5-10% of deaths in those undergoing lung, pancreas or liver transplantation. The aim of the present study was to identify the incidence of invasive fungal infections in solid organ transplant recipients, in Namazi hospital, Shiraz University of Medical Sciences, Shiraz, Iran. Recipients undergone liver and kidney transplantations were followed for fungal infections for a minimum 6 month period. All clinical samples were examined by routine methods. Whole blood specimens were collected prospectively once per week and were evaluated for any invasive fungal infections by panfungal PCR and PCR-Enzyme Link Immunosorbent Assay (ELISA). One handrad-sixty eight recipients were transplanted between September 2004 and January 2006 (75 females, 93 males, mean age:34.4 years), In proven and probable recipients for fungal infections, the sensitivity, specificity, positive and negative predictive values by panfungal PCR-ELISA were 83.3%, 91.7%, 76.9% and 94.3% respectively. By PCR-ELISA, fungal infections were diagnosed in 14 recipients (8.3%). Time of infection in blood prior to any clinical signs was 7-70 days with mean of 21.4 days. The etiologic agents were Candida albicans (13 recipients) and Aspergillus fumigatus (1 recipient). Of the 14 cases, eleven recipients died. Fungal infections are associated with increased morbidity and mortality rates following transplantation. Treatment strategies involving antifungal prophylaxis for high risk patients and earlier initiation of antifungal therapy in cases of presumed infection are warranted.

TISSUE ALLOGRAFT DISCARDS SECONDARY TO SEROLOGY IN THE IRANIAN TISSUE BANK (2002-2007)

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Iranian tissue bank prepares a wide range of human tissue grafts such as; heart valve, bone, skin and amniotic membrane for different clinical applications. Upon AATB standards the donor’s blood sample is tested for: HIV1,2 Antibody, HBsAg, HBCAb, HCV Ab, HTLV1,2Ab and RPR. The availability of tissue allograft is often limited by these viruses. The purpose of this retrospective review was to determine the human tissue allograft discard rates related positive serological tests. From April 2002 to April 2007, 1548 tissue donors including 56 amniotic membrane living donors and 1492 bone, heart valve, skin and other tissues cadaver donors(1171 males and 377 females) were screened and procured after informed consent had been obtained. All donors were reviewed for the cause of death, past medical history, physical examination and social history and donors’ blood sample were tested with serological methods. 181 donors (11.69 %) were discarded due to positive serology. HBcAb was the most predominant reason (5.55 %) that followed by HBsAg (2.9 %) and then HCV Ab (2.84 %), HTLV1,2Ab (1.61 %), HIV1,2Ab (0.64 %), and RPR (0.51 %) was the least predominant. We found a significant correlation between donor’s sex and positive serology (males> females, P value< 0.05). In conclusion, despite the strict adherence to donor selection criteria, positive serology in blood sample of tissue donors does not reach zero and we need better screening methods in order to decrease our current discard rates and cost of procured tissues. We recommend that all tissue banks should be involve both routine serological procedures and other complementary tests such as; NAT for screening of tissue donors and increasing tissue safety and assurance. The addition of NAT to screening of tissue donors can reduce the risk of transmission of viral infections from donor to recipient for providing safe allograft tissues.
P-378
IS SCREENING FOR IGG ANTIBODY TO CYTOMEGALOVIRUS AND EPSTEIN-BARR VIRUS INFECTIONS MANDATORY IN POTENTIAL RENAL TRANSPLANT RECIPIENTS AND DONORS IN IRAN?

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Cytomegalovirus (CMV) and / or Epstein-Barr virus (EBV) infections in renal transplant recipients may cause significant morbidity and mortality. In order to managing these infections, established guidelines suggest that both the recipient and the donor should be routinely tested for anti-CMV and anti-EBV antibodies prior to renal transplantation. The aim of the present study was to assess the effectiveness of such screening among populations living in Iran. We have retrospectively analyzed the incidence of CMV and EBV infection in 925 and 710 potential renal allograft donors and recipients, respectively. Recipients received their kidney allograft between 2006 and 2008. All recipients were first transplants. Enzyme linked immunosorbant assay (ELISA) tests were performed on these samples to determine if antibodies to CMV (IgG) and EBV viral capsid antigen (VCAIgG), were present. Finally the seroprevalence and demographic factors were analyzed. 568 (61.40%) individuals of potential renal transplant donors and 483 (68.02%) individuals of potential renal transplant recipients were male. Donors group aged 18 to 50 years (mean and standard deviation were 30.7 and 8.1 years, respectively) and recipients group aged 18 to 60 years (mean and standard deviation were 45.9 and 7.3 years, respectively). Pretransplant CMV (IgG) and EBV (VCAIgG) seroprevalences were 100% in all age and sex groups of donors and recipients. Our findings suggest that in kidney transplant centers in Iran, routine screening for IgG antibodies to CMV and EBV is not necessary in potential renal transplant recipients and donors with age > or = 18 years old.

P-379
NEPHROIC SYNDROME AFTER HEMATOPOEITIC CELL TRANSPLANTATION

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Hematopoietic cell transplantation (HCT) is an increasingly common treatment for many malignancies. Each type of HCT carries its own risks and complications. The most common chronic complications are calcinurine inhibitors (CsA) toxicities, development of chronic graft versus host disease (GVHD). Occurrence of chronic renal disorders after HCT is rare and only a few cases have been reported. Renal damage can be induced by several conditions such as total-body irradiation (TBI), CsA and other nephrotoxic agents, and also because of graft versus host diseases. The aim of this study was to evaluate the occurrence of nephrotic syndrome after HCT. To evaluate the frequency of nephrotic syndrome one thousand six hundred ninety three recipients of HCT were evaluated between 1997and 2006 at the Bone Marrow Transplant Research Center, Shariati hospital,Tehran-Iran. Patients were followed prospectively after three months of transplant. Nephrotic syndrome was defined as proteinuria more than 3gr/24hr urine, at any time after three months of the post-transplant period. The risk of nephrotic syndrome in relation to non based total body irradiation conditioning regimen, type of graft (allograft, autograft) and comorbidity, GVHD, drug toxicity was examined in 1693 HCT patients. Nephrotic syndrome occurred in 15% of patients 10 patients with a biopsy proven glomerular involvement, mostly had membranous glomerulonephritis (MGN) (7 cases), membranoproliferative glomerulonephritis MPGN (1 case), sandimmune toxicity (1 case), minimal change disease (1case). The predominant underlying diagnosis were, CML (3 cases), AA (2 cases) AML (3 cases) and ALL (2 cases). Nephrotic syndrome was the most common abnormality (9of 66 patients) after allograft HCT, with a mean of 18 months. In conclusion, a higher frequency was observed in patients who received allograft HCT. The presence of GVHD increased the risk of nephrotic syndrome after three months of HCT.
P-380
RELATIONSHIP OF RENAL RESISTANCE INDEX WITH CARDIOVASCULAR DISEASE IN RENAL TRANSPLANT RECIPIENTS
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Renal transplantation is the treatment of choice for end-stage renal disease in regards to morbidity, mortality and quality of life. Following transplantation, cardiovascular disease is the main cause of mortality. An increased renal allograft resistive index (RI) is associated with patient survival. We suggest examining the predictive value of intrarenal RI on present atherosclerotic diseases. Between 1999-2001 years, 97 patients who underwent renal transplantation and with stable renal function were included in the study. The patients who had renal artery stenosis, evidence of urinary tract obstruction, clinical signs acute rejection, with cyclosporine toxicidity after transplantation were excluded. The clinical and laboratory parameters were obtained on each patient from the hospital records: demographic features, medications, serum creatinine, lipid parameters, body mass index (BMI), systolic blood pressure, diastolic blood pressure, pulse pressure (PP), mean arterial pressure (MAP) and measurement of intrarenal RI by Doppler ultrasonography (US). At study entry, blood was taken from all subjects under standardized conditions. Estimated glomerular filtration rate was calculated according to the simplified version of the Modification of Diet in Renal Disease (MDRD). The intima-media thickness of the common carotid artery (CIMT) was measured and Doppler US had been performed for calculation of intrarenal graft RI at the time of the study. In linear regression analysis, RI was significantly correlated with recipient age (Beta= 0.260, p=0.010), systolic blood pressure (Beta=0.380, p=0.00), PP (Beta=0.567, p=0.00), BMI (Beta= 0.220, p=0.035) and CIMT (Beta=0.264, p=0.009). Multivariate linear regression analysis demonstrated that only PP (Beta= 0.518; p=0.00) was independent predictive value for intrarenal RI. Intrarenal RIs are a complex integration of arterial compliance, arterial pulsatility, and peripheral resistance, which are associated with traditional cardiovascular risk factors and with the presence of atherosclerotic disease. In patients with stable renal function, renal RIs have been associated with carotid atherosclerosis assessed as carotid intima-media thickness. We found that increased intrarenal graft RI may predict present of cardiovascular disease in noncomplicie renal transplant recipients.

P-381
SHORT-TERM AND LONG-TERM EFFECTS OF DELAYED GRAFT FUNCTION ON GRAFT SURVIVAL IN PEDIATRIC LIVE DONOR RENAL TRANSPLANTATION
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Delayed graft function (DGF) generally has early and long term consequences for allograft survival. Limited studies have been performed about DGF and its complications in pediatric renal transplantation. Therefore, 230 children who received transplants between 1985 and 2005 in Labafi Nejad hospital were included in this study. DGF was defined if the serum creatinine level increased, remained unchanged, or decreased by less than 10% per day immediately after surgery during three consecutive days in first week after transplantation. The children were divided in two groups: 183 children in group A (Non DGF) and 47 patients in group B (DGF). The impact of DGF on renal function within the first year, long-term graft survival and post transplantation complications were analyzed and compared using Logistic regression model and Kaplan–Meier survival analysis. The incidence of graft failure at the end of follow-up period was significantly more common in DGF group (53.2% vs. 22.4%, P<0.001). The mean survival time was 134.20(SEM=6.17) months in group A (Non DGF) and 76.52(SEM=12.41) months in group B (DGF) (P<0.001). The graft survival rate was 94.9%, 91.9%, 83.9%, 79.2% and 72% at 1, 3, 5, 7 and 12 years after transplantation in children without DGF versus 75.6%, 53.2%, 47.2%, 31.9% at 1, 3, 5 and 8 years after transplantation in patients with DGF. The results of our study showed that delayed graft function could remarkably affect graft survival and worsen both short-term and long-term transplantation outcomes. Thus, the prevention of DGF is one of the most important issues in graft survival improvement.
P-382

ACUTE TUBULAR NECROSIS AFTER RENAL-ALLOGRAFT SEGMENTAL INFARCT: NEPHROTOXICITY OF NECROTIC MATERIAL.

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Renal allograft dysfunction could be due to hypovolemia, renal vessel thrombosis, rejection, acute tubular necrosis (ATN), cyclosporine toxicity and post renal obstruction. Segmental infarct is a poorly characterized complication of renal allograft. It is due to disruption or thrombosis in one of renal artery branches. We report here a case of renal allograft dysfunction that occurred after allograft segmental infarction. We propose that infarct material could induce ATN and renal allograft dysfunction. Patient was a 30-year-old man who received a living unrelated renal transplantation. He was started on immunosuppressive therapy with the Basiliximab, steroid, mycophenolate mofetil and cyclosporine. Allograft had a good function and produced more than 10 liter urine in first 24 of transplantation. Urine output decreased visibly thereafter and reached less than 0.5 liter at fifth day of transplantation. Doppler ultrasound study revealed a lack of perfusion in the lower pole of the renal allograft that was supplied by a polar artery and it was damaged during engraftment. Patient's blood pressure rose to 180/120 mmHg on the second day of transplantation. By fifth day of transplantation serum creatinine levels were 6 mg/dl, serum lactic dehydrogenase (LDH):1730 IU/L (250-500), Alanin aminotransferase (ALT):120 IU/L (5-40) and Asparate Aminotransferase (AST) was:160 IU/L (5-40). White blood cell count: 11000/µl, Platelets: 256000/µl, Hemoglobin: 9.5 mg/dl. Hemodialysis was started and with a clinical diagnosis of acute rejection he received antithymocyte globuline (ATG) therapy. Light microscopic study of the allograft biopsy that was taken on 8th day of transplantation disclosed tubular cells necrosis without interstitial inflammation or tabulates. Glomerulus’s and vessels were normal. Immunoflurescence staining for peri-tubular capillaries for C4d deposition was negative. We have speculated that substances such as TNF-α heat shock proteins (HSP70 and HSP60) that are released from the necrotic area could spread thought the renal cortex and act as endogenous tubular toxins and trigger intense tissue damage.

P-383

HEPATIC CHANGES DURING VARIOUS PERIODS OF REPERFUSION AFTER INDUCTION OF RENAL ISCHEMIA

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Acute renal failure (ARF) results in significant morbidity and mortality, yet renal failure itself is not the usual cause of death in the clinical situation. Recent studies have suggested that damages to the kidneys cause liver tissue alterations. Thus, the death may be related to liver complications as well as renal injury. The aim of the present study was to assess the hepatic changes during various periods of reperfusion after induction of renal ischemia. Forty male rats were subjected to either sham operation or 45 min ischemia followed by 1, 3, 6, and 24 hours of reperfusion. Arterial blood pressure was continuously monitored. Blood samples were drawn post-operatively to measure serum creatinine and BUN. Hepatic concentrations of IL-10 and tumor necrosis factor TNF-α were evaluated. A portion of liver and kidney tissues were fixed for histological evaluations. Reperfusion caused significant changes in liver structure and a significant reduction in renal function demonstrated by increase in serum creatinine and BUN. These rats also showed a significant increase in hepatic TNF-α and IL-10 concentrations. Most changes observed in 3 hrs reperfusion (e.g. TNF-α, 616±41 vs 215±16 and IL-10, 926±73 vs 125±34, pg/100 mg tissue, p≤0.05). Renal ischemia-reperfusion results in distant effects on liver histology, function and inflammatory status. These may have been due to increased renal production or impaired clearance of mediators of tissue injury, such as pro-inflammatory cytokines. The reduction in liver injury in 24 hrs reperfusion comparing to the other groups, suggests activation of late-protective mechanisms. These observations may be important in the clinical interventions to reduce the morbidity and mortality of ARF.
A MODIFIED QUANTITATIVE SUBJECTIVE GLOBAL ASSESSMENT OF NUTRITION FOR PATIENTS ON THE RENAL TRANSPLANT WAITING LIST

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Subjective Global Assessment (SGA) is widely used and validated method for identifying and classifying malnutrition. It has been thought that this semi-quantitative feature restricts the SGA’s reliability and precision. Recently, in an effort to assess the nutritional status modified quantitative subjective global assessment system has been devised in which scores are assigned for items or components of the SGA. This prospective study evaluated both conventional and quantitative SGA systems. Using the components of the conventional SGA, we operated a fully quantitative scoring system consisting of seven variables: weight changes, dietary intake, gastrointestinal symptoms, functional capacity, co morbidity, subcutaneous fat, and sign of muscle wasting. Each component was assigned a score from 1 (normal) to 5 (very severe). The sum of all seven components in this malnutrition score lies between 7 (normal) and 35 (severely malnourished). To evaluate nutritional status patients on renal transplantation waiting list, mid-arm circumference (MAC), body mass index (BMI) and laboratory parameters were used. Twenty-seven patients (9 women and 18 men) were randomly selected from the waiting list. Patients’ ages were between 16 and 62 years (43.1±11.6) and on hemodialysis between 1 and 196 months (55.9±44.9). Correlation coefficients between the malnutrition score and duration of hemodialysis \((r = +0.72)\), sex \((r = +0.44)\), total iron binding capacity \((r = -0.44)\) were significant, whereas the conventional SGA had significant correlation only with duration of hemodialysis \((r = +0.42)\). Multiple regression analysis showed a significant correlation between malnutrition score and the combination of duration of hemodialysis, sex, total iron binding capacity \((r = 0.77, p<0.001)\). In conclusion, the quantitative SGA scoring system may be better than the conventional SGA to evaluate patients on the waiting list. More comparative studies are required to confirm the validity of this scoring system in nutritional evaluation of renal transplant candidates.

RENALENTAL TRANSPLANTATION FROM DECEASED DONORS

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Renal transplantation from cadaver donors is a widely accepted treatment choice for end stage renal disease patients. Gazi University Transplantation Center was established on January 1996 between 1996 and 2006 there were 22 cadaver donors. January 2006 transplantation center was re-established. January 2006 through September 2008, totally 38 cadaver renal transplantation was performed. We retrospectively analyzed outcome of 38 cadaver donors from our data base. There were 20 male, 18 women recipients. Nine out of 38 are pediatric, the rest are adult recipient. Mean donor and recipients’ ages are 29, 44±14,1 and 41,7±15,1 years old respectively. The immunosuppression therapy consists of steroids, MMF and calcineurin inhibitors. As induction therapy recipients received Simulect 20 mg on day 0 and 4. All patients were treated with pulse steroids (10mg/kg) for acute rejection episodes. ATG (2mg/kg) was used in steroid resistant acute rejection cases. Totally 6 acute rejections were seen in 6 patients. Two out of 6 were steroid resistant acute rejection and ATG was used for treatment. Postoperative follow up median is 62 weeks (3-121 weeks). Six months, 1 and 2 years of patients and graft survivals are %100, %100 % 97,3 and %97,3, %94,7, %88,8 respectively. Totally 4 grafts were lost. Two were from viral infections (BK nephropathy), 1 renal artery thrombosis and 1 pediatric dual kidney to adult kidney. Only 1 (2%) patient was died due to sepsis. There were 4 (10.5%) postoperative complications; 4 incisional hernia. In one patient, urine leak was seen as urinary complication.
LOW DOSE THYMoglobulin INDUCTION THERAPY FOR KIDNEY TRANSPLANTATION IS EFFECTIVE AND WELL TOLERATED IN ELDERLY PATIENTS

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Current immunosuppressive therapies and protocols have led to significant improvements in early (<1 year) patient and graft survival rates following kidney transplantation. Whether induction therapies such as Thymoglobulin (TGL) contribute to these improved results remains controversial. Full-dose TGL induction therapy (7-10 mg/kg) has been associated with increased morbidity in the early post-transplant period which may be especially true in a high risk population such as the elderly. Therefore, we studied the efficacy and tolerability of a low-dose TGL induction strategy in older recipients (>65 years) (Gr.1, n=45). We compared their post-transplant outcomes to a group of patients less than 65 years old (Group 2, n=45) transplanted during the same period. All patients were transplanted at a single center between Jan. 2001 and Sept. 2007. Both groups received a similar low-dose of TGL induction therapy (Gr.1=2.96 ± 1.29 vs. Gr.2=3.2 ± 2.11 mg/kg). The average age in years for Gr.1 was 73.8 ± 5.4 and for Gr.2, 48 ± 10.7 (p<0.001). The two groups were similar in number of men (66%), African Americans (28%), diabetics (35%), patients with PRA > 30% (6%), CIT (16.1 hrs.), DGF (26%) and living donors (10%). All patients were maintained on a calcineurin inhibitor, mycophenolic acid, and low dose prednisone (5 mg/day). To date, none of the older patients experienced AR whereas 1 younger patient had AR. Initial hospital stays were equal (Gr1 7.8 ± 3.2 vs. Gr.2 7.5± 4.4 days, p=0.35). Within the first 6 months, 9 older patients required re-hospitalization compared to 15 younger patients (p=0.15). Bacterial infections in both groups (Gr.1 vs. Gr. 2) were equal including wound (4 vs. 0), urine (20 vs. 15), lung (1 vs. 1) and skin (0 vs. 2). There were 2 BK viral infections in Gr.1. Gr.2 had 3 viral infections, 2 CMV and 1 H. zoster. eGFR at 6 months was equal in both groups (Gr.1 55.7±18.5 vs. Gr.2 52.7±18.5 ml/min). 3-year patient and graft survival rates were equivalent in both groups (Gr1. 86.6% vs. Gr. 2. 97.6%). In conclusion, low dose TGL induction therapy is safe and effective in patients >65 years of age. When compared to younger patients, low-dose TGL leads to equivalent graft survival and function without incurring excess morbidity in the older population.

PENILE KAPOSI’S SARCOMAS IN A RENAL TRANSPLANT PATIENT WITH CMV INFECTION

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Kaposi’s sarcoma (KS) is one of the most common tumors to occur in kidney recipients, especially in Middle Eastern countries. KS limited to penis has rarely been reported and is usually observed in patients with AIDS. Herein, we describe a 35-year-old HIV-negative man who had undergone kidney transplantation one year earlier and subsequently had presented with an isolated KS on the penis associated with concurrent infection by cytomegalovirus (CMV). KS was successfully cured by withdrawing immunosuppressive agents, chemotherapy and radiotherapy. His renal allograft function remained stable during 3 years of follow up. To our knowledge, this case is the first report of penile KS associated with CMV infection, and early diagnosis and prompt treatment of a rare complication of a common disease such as KS is essential.
P-388

PANEL-REACTIVE ANTIBODY CHANGE FOLLOWING TREATMENT WITH EITHER ATROVASTATIN OR MYCOPHENOLATE MOFETIL IN SENSITIZED HEMODIALYSIS PATIENTS

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Both atrovastatin and mycophenolate mofetil (MMF) have been used for PRA reduction in transplant candidates. The purpose of this current investigation was to perform a pilot study to compare the effect of MMF and atrovastatin on panel reactive antibody in sensitized hemodialysis patients waiting for renal transplantation. A total of 40 adult patients with ESRD who were highly sensitized to HLA antigens (PRA>40%) enrolled. Patients were randomly assigned in Atorvastatin or MMF group. 20 patients received Atorvastatin and 20 patients received MMF for two months. PRA status determinations were performed at monthly intervals at the end of first and second month. The complete response to the therapy defined as decrease in PRA by 50% or more compared to baseline values at the end of trial was determined in both groups. Results Baseline PRA levels were similar in both groups. PRA changes in MMF group were not significant. 40% of patients in Atorvastatin group compared with 5% of patients in MMF group showed the complete response (p=0.02). PRA reduction in atorvastatin group was significantly higher than MMF group (p=0.01). No major infectious or other complications occurred in our patients. Two months treatment with atorvastatin reduces PRA in highly sensitized hemodialysis patients. MMF was not effective on PRA in our study. We conclude that Atorvastatin is effective and safe in reducing PRA levels in highly sensitized patients with ESRD. There is no role for MMF in this situation.

P-389

DERMATOFIBROSARCOMA AFTER KIDNEY TRANSPLANTATION: A CASE REPORT

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Increased incidence of infections and malignancies is unavoidable consequence of immunosuppressive treatment after organ transplantation. Dermatofibrosarcoma protuberans (DFSP) is a relatively uncommon spindle cell tumor of the skin that has a propensity for local recurrence but rarely metastasizes. This case report describes a 35 years old man with local recurrent dermatofibrosarcoma of the chest 3 years after receiving a kidney from living unrelated donor. Interestingly, he had a history of successfully treated the tumor 17 years without evidence of tumor recurrence before transplantation. The tumor was resected by removing the mass of the chest. Unfortunately, local recurrence was seen one year after the tumor resection and cessation of cyclosporine; he went on hemodialysis 8 months following repeated relapse. To our knowledge, this case represents the first report of recurrent fibrosarcoma following kidney transplantation in Iran. Early diagnosis and prompt wide local resection of this tumor are required in order to prevent a local recurrence.
Close monitoring of renal function is mandatory in recently kidney transplanted patients to pick the graft rejection earliest. Serum creatinine is commonly used for monitoring of renal allograft function. Cystatin C is a 13.3 KDA protein reflects the glomerular filtration rate independent of age, muscle mass, inflammation or liver disease, is recently proposed as an alternative marker of glomerular function. The diagnostic efficiency of Cystatin C is not well studied in recent Renal Transplant patients. The present study was therefore undertaken. 25 recently renal transplanted patients from a referral hospital in Riyadh KSA, between Jan 2004 to June 2004 were followed from first day post transplant till discharge from hospital (10.4±4.25 days). Apart from patient’s demographics, height, weight, BMI, blood sugar, liver profile, and kidney profile were recorded. Serum Cystatin C was estimated by Particle Enhanced Nephro Immunoassay. This assay employs antibody coated latex particles which react with Cystatin C (antigen) in the specimen in a reaction cell of an automated nephelometer (Dade Behring Germany). While creatinine was measured by enzymatic method on Auto analyzer. 25 post renal transplant patients were followed for 10.46±4.25 days starting from first post transplant day. There were 7 (28%) males and 18 (72%) females. mean age was 41.7±11.9 (20-68yrs). Due to recovery of renal function both serum creatinine and Cystatin C were reduced from pre transplant higher levels towards normal levels in the post transplant period. The serum creatinine in the pre-transplant patients was 658.91±248.umol/l (264, 8- 1195 mmol/l) .On the Day 1, serum creatinine was reduced by 67.8 ± 15.3 % (211±92 m mol/l) from its pre transplant level p=0.000. Similarly on the post transplant Day 1, serum Cystatin C was reduced by 68.96±22.8% from its pre transplant level. (From 7.6±3.09mg/l pretransplant to 1.73±0.63mg/l at day 1 post transplant) p=0.000. A greater reduction in serum Cystatin C level was noted in post transplant recovery phase than serum creatinine. On the Day 2, post transplant, serum creatinine was reduced by 71.4±±1.5% from its pre transplant level, while on the Day2, serum Cystatin C was reduced by 72.16 ±19.44 % from its pre transplant level. A strong correlation was found between serum creatinine and serum Cystatin Cr = .604, p =.002. How ever the reduction in the serum Cystatin C was greater than serum creatinine. On the Day 3: serum Cystatin C was reduced by 71.36±18.7 %. A strong correlation was found on the Day 3 also between serum creatinine and serum Cystatin C r =.689, p =0.000.On the subsequent post transplant days similar parallel day to day variations were noted in serum creatinine and serum Cystatin C. Eight of renal transplant patients had delayed graft function recovery . In these patients also parallel reduction of serum levels of creatinine and Cystatin C was observed. On the day 10, serum creatinine was reduced by 82.2±7.02%, while serum Cystatin C was reduced by 82.1±1.9%. There was no difference between reduction of serum creatinine and serum Cystatin C p=0.969. Serum Cystatin C was not correlated with age or gender. In conclusion, serum Cystatin C goes parallel to serum Creatinine in day to day follow-up of post renal transplant patients. Strong correlation was found between serum creatinine and serum Cystatin C magnitude of change during graft function recovery was more with Cystatin C. Cystatin C can be used for the follow-up of post renal transplant patients. Being independent of age sex, inflammation and liver dysfunction it can prove to be better marker of renal function.
P-392
PREOPERATIVE EVALUATION OF LIVING DONORS USING COMPUTED TOMOGRAPHY ANGIOGRAPHY (CTA) AND FORMAL ANGIOGRAPHY: COMPARISON WITH INTRAOPERATIVE FINDINGS

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CTA is a minimally invasive modality to image the vasculature without the morbidity of direct large vessel vasculature access and its major indications in urology are assessment of the renal vasculature in preparation for donor nephrectomy, indentification of extravessel in evaluation of ureteropelvic junction obstruction and for diagnosis of renal artery stenosis. To assess the accuracy of CTA for the evaluation of renal vascular anatomy for preoperative donor assessment in living kidney transplantation, CTA of 70 living donor kidney donors were analysed by two blinded observers and compared with intraoperative findings. Similarly findings of conventional angiography of 30 living kidney donors compared with intraoperative observations. In CTA group there were two patients each with two main renal veins on surgery that had not been seen on CTA. In the second group there was one patient with unrevealed two main renal veins before surgery. In both groups, all patients were diagnosed accessory renal arteries, if existed.

Discussion: Overall, the accuracy for main renal artery anatomy was 100% for both CTA and conventional angiography. Accuracy for main renal vein anatomy was 97.1% and 96.6% for CTA and conventional angiography, respectively. Hence, these two modalities had comparable results for main renal vasculature anatomy detection.

P-393
CARDIOPULMONARY RESUSCITATION DOES NOT NEGATIVELY AFFECT CADAVERIC HEART PROCUREMENT

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There is always a fear that cardiopulmonary resuscitation in brain dead patients could inflict such injuries to patients’ heart that make it unsuitable for transplantation. This is while organ shortage forces specialists to retrieve more organs from brain dead patients. The aim of the current study is to find if cardiopulmonary resuscitation (CPR) in brain dead patients have an effect on the number of harvested hearts. In a retrospective design, the hospitalization documents of all brain death patients in Masih Daneshvari Hospital from January 2005 to July 2008 were surveyed for evidences of CPR during hospitalization. Patients were grouped into those with CPR during the hospitalization course and those without CPR. We then surveyed to see if the number of harvested hearts is different between the two groups. During the hospitalization, CPR procedure was performed in 24.7% of brain dead patients. The harvest rate of hearts in the group of patients without CPR was 75.9%. This figure in patients with CPR history was 73.9%. There was no significant difference in the rate of heart donation between the two groups (p=0.53). The result of our study showed that CPR procedure in brain dead patients have no negative effect on the rate of heart donation. Regarding the fact that brain dead patients have usually unstable condition and may require CPR in the course of hospitalization, our finding shows a good promise in the face of organ shortage for transplantation.
IDIOPATHIC PLEUROPARENCHYMAL FIBROELASTOSIS AFTER LUNG TRANSPLANTATION

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Idiopathic pleuroparenchymal fibroelastosis is a rare entity. It consists of fibrotic thickening of the pleura and subpleural parenchyma. The report of such phenomenon after lung transplantation has not been made. The patient was a 52 years old woman. She receives single lung transplantation on May 2007 because of end stage pulmonary fibrosis. One month after successful lung transplantation, she began to develop pleural thickening in the transplanted lung. The thickening progressed gradually and made significant restriction for the transplanted lung. She started having severe progressive dyspnea 13 months after lung transplantation. In plain chest radiogram and HRCT-Scan, severe pleural thickening at the base of the transplanted lung is obvious. Fibrotic band are also extended into the lung parenchyma. The course of the disease was progressive with no response to high-dose corticosteroid therapy. Previous reports of similar condition are scant and do not contain lung-transplanted patients. The radiographic features in plain chest radiogram and HRCT are similar with the exception that previous reports showed such phenomenon in upper lobes while the findings in our patient was more prominent at lower lobe. We did not observe any improvement in patient and disease condition using corticosteroid therapy. While lung transplantation therapy was reported as a treatment in some previous cases, we cannot justify such treatment in our patient regarding the fact that the illness occurred after and within the transplanted lung. Treatment of such illness remained a challenge and requires further investigation.

HARVEST RATE OF LUNGS FROM BRAIN DEAD PATIENTS; A SINGLE CENTER EXPERIENCE

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Brain dead patients are almost the only source of organ for lung transplantation. As a result, the harvest rate in these patients is the limiting factor for lung transplantation. This is while lungs are the most sensitive organs regarding the appropriateness for harvest and transplantation and this could have a great impact on the harvest rate. The aim of the current study is to find what percent of the lungs are appropriate for transplantation in brain dead patients. Using the brain death database at organ procurement unit of Masih Daneshvari Hospital, we sought to find which brain dead patients have donated his/her lungs. We also reviewed the causes behind failing to donate an organ. From total 93 brain death registration form 2004, only 4.6% of patients donated their lungs. 16.1% of the patients had acceptable oxygen challenge test results (< 300 mmHg). Pulmonary aspiration and contusion were among the causes that lung harvest was not performed in patients with acceptable oxygen challenge test results. In conclusion in our center only a very small percent of lungs are appropriate for harvest in brain dead patients. Aside from the cause of injury, proper management of the patients has an important role in prevention of injury to the lungs and keeping them in good condition for harvest. The authors believe that especial attention should be paid to education of ICU staffs and physicians to enhance the caring quality and hence increase the lung harvest rate.
P-396
RAMADAN INCREASES ORGAN DONATION WILLINGNESS IN IRAN

Transplant Research Center, Massih Daneshvari Hospital, Darabad-Niavaran, Tehran, Iran

Organ shortage is the most limiting factor for transplantation systems. The total value of life lost due to death because of waiting for an organ transplant is greater than $ billions in the world and the excess demand for organs has been increasing over time. We report here the impact of Ramadan on willingness to organ donation in Iran. In a retrospective cohort, we analysed the trend of registries for organ donation in a single center in Iran. Data was extracted from organ procurement unit of Massih Daneshvari hospital. Monthly donation willingness registries achieved to 11528 participants during Ramadan 2007, this rate was 4538 in previous month. The increasing rate was 154 percent. There was a significant difference by means of sociodemographic data of those registered in this month in comparison to the previous months. Influence of Ramadan on donation willingness is similar to its promotive effect of religious behaviors. Donation of an organ is encouraged by Islam, as according to this religion, saving a life is saving all people. This effect may be secondary to the realize of the reality of death or making people to think to other people.

397
INFLUENCE OF SURGICAL TECHNIQUE ON POST OPERATIVE RENAL FUNCTION IN ORTHOTOPIC LIVER TRANSPLANTATION

Shiraz Transplant Center, Namazi Hospital and Transplant Research Center, Shiraz University of Medical Sciences, Shiraz, Iran

Classic technique in orthotopic liver transplantation (OLT) consists of total excision of retrohepatic inferior vena cava (IVC) during native hepatectomy. Clamping of the IVC above renal veins causes renal hemodynamic changes. There is controversy over the influence of classic technique on the postoperative renal function. The objective of this study is evaluation of the effect of hepatectomy technique on the postoperative renal function. From 253 cases of OLT between June 2006 and July 2008 in Shiraz transplant unit, only 15 cases (5.9%, 10 male, 5 female, 38.07±11.69 y/o) operated by classic technique. Patient demographics, factors including cold ischemic time (CIT), warm ischemic time (WIT), operative time, transfusions, blood loss, and early postoperative renal function were assessed retrospectively. Criteria for acute renal failure were serum creatinine (Cr)>1.5, an increase in baseline serum Cr by 50%, or oliguria requiring renal replacement therapy (RRT). The cause of end stage liver disease was cryptogenic cirrhosis in 4, hepatitis B in 3, autoimmune hepatitis in 3, primary sclerosing cholangitis in 2, hepatitis C in 2 and Budd-Chiari in 1. All patients received liver from deceased donor and none of them required venovenous bypass during the operation. Minimum mean arterial blood pressure of the patients during clamping was 75±19 mmHg. Mean preoperative plasma Cr was 0.99±0.45 mg/dl. During the first week after transplantation 7 patients (46.6 %) developed ARF 3 of which required RRT. 4 of the patients died 1 from adult respiratory distress syndrome, 2 from sepsis and 1 from recurrent cholangiocarcinoma after 3 months. In all other patients the plasma Cr returned to normal after 3 weeks and during the follow-up period (6.55±3.10 months). In Conclusion, Use of classic technique for OLT may increase the rate of postoperative renal failure but this complication is mostly reversible in short-term follow-up.
INDEX

A
Al Nashmi M O-2, P-350
Al Duraihimh H O-3
Al Sayyari A O-3
Alfie A O-3
Alamin M O-3
Ahmed E O-5, O-34, P-63, P-245
Ali S O-5
Aboutverat A O-9, P-86
Aydogan C O-11
Alqutub A O-10
Alizade-Naeeni M O-13
Abouljoud MO-15
Aliabadi A O-19, P-98
Arslan G O-23, O-30, O-35, O-47, O-54, O-55, P-9, P-10, P-11, P-26, P-51, P-165, P-171, P-174, P-175, P-205, P-230, P-254, P-265, P-331, P-332, P-337
Afzali A O-31
Akhtar F O-34
Al-Otaibi T O-37, P-149, P-288, P-373
Awadain WH O-37, P-149
Al Jondeby M O-38
Al Qureshi S O-38, O-39
Abdulla Al Sayyari A O-38, O-39, P-101
Asadi M O-42
Akgul A O-43, P-223, P-380
Aghdam N O-49
Amirzargar AA O-50, P-178
Aghayani HR O-51, P-5, P-95, P-231, P-232, P-248, P-377
Arjmand B O-51, P-5, P-231, P-232, P-248, P-377
Alehan F O-55
Altınörs N O-60
Abedi HA O-3
Abedi Azar S O-6, P-153, P-141, P-198, P-237, P-308
Ardalan M O-6, P-49, P-198
Alighezardad K O-12
Atae E O-17
Ayatollahi M O-18, P-94, P-179, P-262, P-344, P-18
Azarpira N O-18, P-111, P-179, P-262, P-264, P-344
Aghdaee MH O-18, P-179
Akay TH O-23, P-190
Akpek E O-23, P-190
Aşlamarı S O-23, P-25, P-27, P-190
Akay HT O-25, P-27
Aslamarı O-26
Akkaya I O-27
Ahmadnia H O-29, P-118
Asadpour AA O-29, P-284
Alavian SM O-30, P-70, P-349
Alizadeh O-59, P-14, P-87, P-159
Abbasi MR O-33
Abbaszadeh S O-35, P-106, P-184, P-294, P-309
Akin B O-37
Aved H O-45, P-127, P-335, P-371
Afshar R O-50
Azap OK O-51, P-331
Abbasi T O-52
Aghdam B O-53, P-131, P-217, P-290
Arghami A O-54

Azz Abad Fernahani M P-55, P-62, P-73, P-75, P-96, P-164, P-275, P-319, P-328, P-357
Amini M P-56, P-347
Abderrahim E O-59, P-278, P-304, P-356
Aziz R P-63
Attari F P-64
Ahmadi H P-66
Abou Joudeh M P-67
Ashrafi M P-69
Ashrafi F O-69
Abbasi Dezfooli A P-73, P-156, P-163, P-233, P-321, P-322, P-327, P-328, P-394
Ahmadi F P-80, P-150
Abbasi MR P-80, P-150
Akdur A P-83
Akpek EA P-90
Aminian A P-93, P-170
Arjomand B P-95
Al Suleiman MH P-101
Alghasri M P-106
Atar AF P-106
Ali B P-107
Askari H P-107
Ashraf H P-109, P-311
Abbasi MA P-110
Abbasi A P-110
Aghdaee M P-111
Amin Sharifia P-111
Ardalan MR P-115, P-141, P-195, P-202, P-348, P-360, P-382
Atapour A P-117
Ahmadpour P P-119, P-295, P-374
Azar SA P-121, P-139, P-289
Argani H P-121
Adnan S P-129
Abdi E P-130
Afzal Aghaee M P-131
Amirzargar AA P-131
Abbas K P-138
Ahmadi ZH P-140, P-189, P-233, P-242, P-328
Abdallah S P-142
Al Arrayed A P-142
Al Arrayed A P-142
Aslani J P-144, P-292, P-374
Ahmadi-Zargham H P-145, P-186, P-243
Asadpour A P-148
Akay S P-154
Altın C P-154
Ahmadi SH P-156, P-163
Ahmadi Z P-156
Akbabi GB P-156
Aghamohammadpour H P-164, P-249
Ahmadinejad Z P-170
Azmoudeh Ardalı F P-170
Ayetin U P-171
Abdollahi MH P-185
Asgari M P-188
Aydinalp A P-190
Ahmadzadeh A P-204
Akbulut S P-204, P-274
Arab D P-210
Al-Fateel J P-212, P-363, P-390
Al Suwaid A P-212, P-212
Al Gonaim M P-212
Askar A P-212
<table>
<thead>
<tr>
<th>Name</th>
<th>Page(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banan AA</td>
<td>P-329</td>
</tr>
<tr>
<td>Budruddin M</td>
<td>P-330</td>
</tr>
<tr>
<td>Badiee P</td>
<td>P-333, P-376</td>
</tr>
<tr>
<td>Borzouee M</td>
<td>P-338</td>
</tr>
<tr>
<td>Bazrafshan</td>
<td>P-338</td>
</tr>
<tr>
<td>Babaei GH</td>
<td>P-343</td>
</tr>
<tr>
<td>Behgam Shadmehr M</td>
<td>P-395</td>
</tr>
<tr>
<td>Baqeri G</td>
<td>P-351</td>
</tr>
<tr>
<td>Bazrafshan</td>
<td>P-356</td>
</tr>
<tr>
<td>Bagheri M</td>
<td>P-399</td>
</tr>
<tr>
<td>Baharvand</td>
<td>P-399</td>
</tr>
<tr>
<td>Chitsaz E</td>
<td>O-17</td>
</tr>
<tr>
<td>Christie JD</td>
<td>O-18</td>
</tr>
<tr>
<td>Conte JV</td>
<td>O-18</td>
</tr>
<tr>
<td>Chitsaz S</td>
<td>O-21, P-187</td>
</tr>
<tr>
<td>Cengiz N</td>
<td>O-23, P-123</td>
</tr>
<tr>
<td>Colak T</td>
<td>O-35, P-31, P-44, P-46, P-223, P-307, P-380</td>
</tr>
<tr>
<td>Coskun M</td>
<td>O-52</td>
</tr>
<tr>
<td>Caner H</td>
<td>O-60</td>
</tr>
<tr>
<td>Cherif M</td>
<td>P-45, P-127, P-278, P-335, P-371</td>
</tr>
<tr>
<td>Chebil M</td>
<td>P-45, P-127, P-152, P-335, P-371</td>
</tr>
<tr>
<td>Coskun D</td>
<td>P-82, P-177, P-229, P-253</td>
</tr>
<tr>
<td>Camkirian A</td>
<td>P-91</td>
</tr>
<tr>
<td>Chitsaz S</td>
<td>P-97</td>
</tr>
<tr>
<td>Celasun B</td>
<td>P-99</td>
</tr>
<tr>
<td>Chalian M</td>
<td>P-125, P-203</td>
</tr>
<tr>
<td>Chalian H</td>
<td>P-125</td>
</tr>
<tr>
<td>Couriwaud C</td>
<td>P-211, P-313</td>
</tr>
<tr>
<td>Chalopin JM</td>
<td>P-211, P-313</td>
</tr>
<tr>
<td>Canoz B</td>
<td>P-222</td>
</tr>
<tr>
<td>Cindoruk M</td>
<td>P-263, P-336</td>
</tr>
<tr>
<td>Colak T</td>
<td>P-306</td>
</tr>
<tr>
<td>Chaudhary R</td>
<td>P-390</td>
</tr>
<tr>
<td>Calandra S</td>
<td>P-399</td>
</tr>
<tr>
<td>Danek M</td>
<td>O-6, P-57, P-105, P-386</td>
</tr>
<tr>
<td>Daymon M</td>
<td>O-6, P-57, P-105, P-386</td>
</tr>
<tr>
<td>Dehghani SM</td>
<td>O-7, O-14, O-16, O-45, O-53, P-1, P-4, P-14, P-61, P-84, P-85, P-88, P-166, P-266</td>
</tr>
<tr>
<td>Demirhan B</td>
<td>O-11, P-11, P-44, P-46, P-99, P-123, P-134, P-135, P-172, P-307</td>
</tr>
<tr>
<td>Dehbashy N</td>
<td>O-13</td>
</tr>
<tr>
<td>Dunkler D</td>
<td>O-19</td>
</tr>
<tr>
<td>Derakhshjan A</td>
<td>O-24, P-40, P-74, P-126, P-207, P-301, P-370</td>
</tr>
<tr>
<td>Derakhshjan D</td>
<td>O-24, P-74, P-126, P-370</td>
</tr>
<tr>
<td>Derakhshjan N</td>
<td>O-24, P-74, P-126, P-370</td>
</tr>
<tr>
<td>Dalgc A</td>
<td>O-25, P-82, P-177, P-263, P-299, P-253, P-324, P-336, P-385</td>
</tr>
<tr>
<td>Dayangac M</td>
<td>O-28, O-46</td>
</tr>
<tr>
<td>Duran C</td>
<td>O-28, O-46</td>
</tr>
<tr>
<td>Darvish A</td>
<td>O-31</td>
</tr>
<tr>
<td>Daniel V</td>
<td>O-36</td>
</tr>
<tr>
<td>Darabi MR</td>
<td>O-40, P-225, P-355, P-367, P-392, P-269</td>
</tr>
<tr>
<td>Dehghani M</td>
<td>P-269</td>
</tr>
<tr>
<td>Davari HR</td>
<td>O-56</td>
</tr>
<tr>
<td>Deneriaz C</td>
<td>O-61</td>
</tr>
<tr>
<td>Demirag A</td>
<td>P-8, P-37, P-197, P-384, P-334</td>
</tr>
<tr>
<td>Dianatpure V</td>
<td>P-13,</td>
</tr>
<tr>
<td>Dabir S</td>
<td>P-16, P-92, P-298</td>
</tr>
<tr>
<td>Dönmaz A</td>
<td>P-27, P-190</td>
</tr>
<tr>
<td>Davati A</td>
<td>P-50,</td>
</tr>
<tr>
<td>Donmez A</td>
<td>P-91,</td>
</tr>
<tr>
<td>Donia F</td>
<td>P-149</td>
</tr>
<tr>
<td>Derouich A</td>
<td>P-152</td>
</tr>
<tr>
<td>Dumoulin G</td>
<td>P-211, 313</td>
</tr>
<tr>
<td>Ducloix D</td>
<td>P-11, P-313</td>
</tr>
<tr>
<td>Delavar Kasmaie H</td>
<td>P-235,</td>
</tr>
<tr>
<td>Daemi M M</td>
<td>P-248</td>
</tr>
<tr>
<td>Dibazar F</td>
<td>P-256</td>
</tr>
<tr>
<td>Darai M</td>
<td>P-262, P-344</td>
</tr>
<tr>
<td>Dehghani SN</td>
<td>P-277</td>
</tr>
<tr>
<td>Dadpourow B</td>
<td>P-279</td>
</tr>
<tr>
<td>Dalirani R</td>
<td>P-302</td>
</tr>
<tr>
<td>Darvishi M</td>
<td>P-310</td>
</tr>
<tr>
<td>Diken E</td>
<td>P-324</td>
</tr>
<tr>
<td>Diken T</td>
<td>P-324</td>
</tr>
<tr>
<td>Daneshvar A</td>
<td>P-328</td>
</tr>
<tr>
<td>Dehghani S</td>
<td>P-342</td>
</tr>
<tr>
<td>Dham RS</td>
<td>P-345, P-352, P-363</td>
</tr>
<tr>
<td>Derici U</td>
<td>P-385</td>
</tr>
<tr>
<td>Emad Marvasti V</td>
<td>O-7</td>
</tr>
<tr>
<td>Ehtuish EF</td>
<td>O-9</td>
</tr>
<tr>
<td>Esfahani F</td>
<td>O-21</td>
</tr>
<tr>
<td>Esraghian A</td>
<td>O-26, P-1, P-85, P-88, P-238</td>
</tr>
<tr>
<td>El Usta A</td>
<td>O-29</td>
</tr>
<tr>
<td>Ebrahimi Rad MR</td>
<td>O-50, P-178</td>
</tr>
<tr>
<td>Emami.Razavi SH</td>
<td>P-5</td>
</tr>
<tr>
<td>Eko B</td>
<td>P-8, P-197, P-384</td>
</tr>
<tr>
<td>Elif Sade L</td>
<td>P-23, P-27</td>
</tr>
<tr>
<td>Esfarniar A</td>
<td>P-34</td>
</tr>
<tr>
<td>Entezari AE</td>
<td>P-72</td>
</tr>
<tr>
<td>Emamhadi MA</td>
<td>P-77, P-396, P-191, P-396</td>
</tr>
<tr>
<td>Erer D</td>
<td>P-82, P-229</td>
</tr>
<tr>
<td>Emami H</td>
<td>P-95</td>
</tr>
<tr>
<td>Esilahi SA</td>
<td>P-102</td>
</tr>
<tr>
<td>Esghandiarie E</td>
<td>P-111</td>
</tr>
<tr>
<td>Etemadji I</td>
<td>P-115, P-153, P-198, P-202, P-237, P-289, P-348, P-365</td>
</tr>
<tr>
<td>Esmaeeli Djavid G</td>
<td>P-130</td>
</tr>
<tr>
<td>El-Agroudy A</td>
<td>P-142, P-282, P-346</td>
</tr>
<tr>
<td>Esfahani ST</td>
<td>P-182</td>
</tr>
<tr>
<td>Emami M</td>
<td>P-185</td>
</tr>
<tr>
<td>Esmaeili</td>
<td>P-200, P-300</td>
</tr>
<tr>
<td>Emami Z</td>
<td>P-224</td>
</tr>
<tr>
<td>Esfandiarie H</td>
<td>P-251</td>
</tr>
<tr>
<td>Eyuboglu FO</td>
<td>P-265, P-337</td>
</tr>
<tr>
<td>Ergur FO</td>
<td>P-265, P-337</td>
</tr>
<tr>
<td>Esfarni M</td>
<td>P-268</td>
</tr>
<tr>
<td>Emami Naini A</td>
<td>P-296</td>
</tr>
<tr>
<td>Esfandiarie J</td>
<td>P-317</td>
</tr>
<tr>
<td>Ehab M</td>
<td>P-330</td>
</tr>
<tr>
<td>Esmaelii HA</td>
<td>P-348</td>
</tr>
<tr>
<td>Ehsanpour A</td>
<td>P-388</td>
</tr>
<tr>
<td>Estakhri A</td>
<td>P-400</td>
</tr>
<tr>
<td>Name</td>
<td>Pages</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Farajd R</td>
<td>O-1</td>
</tr>
<tr>
<td>Firouzan A</td>
<td>O-1, P-366</td>
</tr>
<tr>
<td>Farhangi S</td>
<td>O-1</td>
</tr>
<tr>
<td>Farid E</td>
<td>O-2, P-142, P-282, P-346, P-350</td>
</tr>
<tr>
<td>Fatima K</td>
<td>O-5, P-245</td>
</tr>
<tr>
<td>Feng L</td>
<td>O-6, P-57, P-105, P-386</td>
</tr>
<tr>
<td>Fattahi MR</td>
<td>O-13</td>
</tr>
<tr>
<td>Fallahzadeh MH</td>
<td>O-24, P-40, P-74, P-126, P-207, P-301, P-370</td>
</tr>
<tr>
<td>Fallahzadeh MK</td>
<td>O-24, P-74, P-126</td>
</tr>
<tr>
<td>Fazel M</td>
<td>O-24, P-40, P-126, P-207, P-301</td>
</tr>
<tr>
<td>Fidan K</td>
<td>O-25</td>
</tr>
<tr>
<td>Fayala H</td>
<td>P-45, P-127, P-152, P-335, P-371</td>
</tr>
<tr>
<td>Farrokh F</td>
<td>P-72</td>
</tr>
<tr>
<td>Firoozan A</td>
<td>P-72, P-119, P-358</td>
</tr>
<tr>
<td>Farokhnia E</td>
<td>P-75, P-227, P-320</td>
</tr>
<tr>
<td>Faeghi J</td>
<td>P-90</td>
</tr>
<tr>
<td>Firooz M</td>
<td>P-95</td>
</tr>
<tr>
<td>Fatahi MR</td>
<td>P-106, P-294</td>
</tr>
<tr>
<td>Farokhi B</td>
<td>P-110</td>
</tr>
<tr>
<td>Falahzadeh MH</td>
<td>P-110</td>
</tr>
<tr>
<td>Fereshteh Nejad SM</td>
<td>P-125, P-381</td>
</tr>
<tr>
<td>Fazel I</td>
<td>P-130</td>
</tr>
<tr>
<td>Farid R</td>
<td>P-131</td>
</tr>
<tr>
<td>Feiziazadeh B</td>
<td>P-158, P-247</td>
</tr>
<tr>
<td>Forouzan nia SK</td>
<td>P-185</td>
</tr>
<tr>
<td>Falaknaz K</td>
<td>P-209</td>
</tr>
<tr>
<td>Faraz N</td>
<td>P-212</td>
</tr>
<tr>
<td>Faraji MA</td>
<td>P-213</td>
</tr>
<tr>
<td>Fesharaki zadeh M</td>
<td>P-216</td>
</tr>
<tr>
<td>Fahimi F</td>
<td>P-235, P-321</td>
</tr>
<tr>
<td>Fatolahzadeh B</td>
<td>P-252</td>
</tr>
<tr>
<td>Ferestdan ejad SM</td>
<td>P-257</td>
</tr>
<tr>
<td>Fereshteh nejad M</td>
<td>P-273</td>
</tr>
<tr>
<td>Farrokhnia E</td>
<td>P-323</td>
</tr>
<tr>
<td>Farshad S</td>
<td>P-341</td>
</tr>
<tr>
<td>Farzanehkhah M</td>
<td>P-377</td>
</tr>
<tr>
<td>Fazollahi A</td>
<td>P-400</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ghamdi G</td>
<td>O-3, O-39</td>
</tr>
<tr>
<td>Ganji MR</td>
<td>O-4, P-64, P-310, P-347</td>
</tr>
<tr>
<td>Ghaffaripoor S</td>
<td>O-14, O-45, O-56, P-4, P-87, P-155, P-240, P-266, P-255</td>
</tr>
<tr>
<td>Girgis RE</td>
<td>O-18</td>
</tr>
<tr>
<td>Grimm M</td>
<td>O-19, P-98</td>
</tr>
<tr>
<td>Grönnner M</td>
<td>O-19</td>
</tr>
<tr>
<td>Ghaleh golab A</td>
<td>O-24</td>
</tr>
<tr>
<td>Guasch X</td>
<td>O-32</td>
</tr>
<tr>
<td>Chulam S</td>
<td>O-38</td>
</tr>
<tr>
<td>Ghali B</td>
<td>O-39</td>
</tr>
<tr>
<td>Gafari Mogadam A</td>
<td>O-42</td>
</tr>
<tr>
<td>Golashan H</td>
<td>O-48</td>
</tr>
<tr>
<td>Goodarzi P</td>
<td>O-51, P-231, P-232, P-377</td>
</tr>
<tr>
<td>Geramizadeh B</td>
<td>O-56, O-57, P-1, P-4, P-18, P-88, P-94, P-111, P-146, P-161, P-169, P-179, P-262, P-293, P-344, P-375, P-379, P-425, P-500, P-536, P-600, P-650, P-690, P-740, P-790, P-840, P-890, P-940, P-990, P-1140, P-1190, P-1240, P-1290, P-1340, P-1390, P-1440, P-1490, P-1540, P-1590, P-1640, P-1690, P-1740, P-1790, P-1840, P-1890, P-1940, P-1990, P-2040, P-2090, P-2140, P-2190, P-2240, P-2290, P-2340, P-2390, P-2440, P-2490, P-2540, P-2590, P-2640, P-2690, P-2740, P-2790, P-2840, P-2890, P-2940, P-2990, P-3040, P-3090, P-3140, P-3190, P-3240, P-3290, P-3340, P-3390, P-3440, P-3490, P-3540, P-3590, P-3640, P-3690, P-3740, P-3790, P-3840, P-3890, P-3940, P-3990, P-4040</td>
</tr>
<tr>
<td>Ghobadi O</td>
<td>O-62, P-60, P-62, P-77, P-270, P-396</td>
</tr>
<tr>
<td>Name</td>
<td>Page(s)</td>
</tr>
<tr>
<td>-----------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Nobakht Haghighi A</td>
<td>P-130</td>
</tr>
<tr>
<td>Nakhjavan MAJ</td>
<td>P-141</td>
</tr>
<tr>
<td>Nikobakht M</td>
<td>P-148</td>
</tr>
<tr>
<td>Najafi A</td>
<td>P-170</td>
</tr>
<tr>
<td>Najmzadeh Z</td>
<td>P-170</td>
</tr>
<tr>
<td>Norbala MH</td>
<td>P-183</td>
</tr>
<tr>
<td>Noori Majelan D</td>
<td>P-185</td>
</tr>
<tr>
<td>Naserzadeh N</td>
<td>P-185</td>
</tr>
<tr>
<td>Nazem A</td>
<td>P-210</td>
</tr>
<tr>
<td>Nakhaii S</td>
<td>P-221</td>
</tr>
<tr>
<td>Nadim-Zadeh N</td>
<td>P-236</td>
</tr>
<tr>
<td>Naqvi A</td>
<td>P-245</td>
</tr>
<tr>
<td>Nozary Heshmati B</td>
<td>P-248, P-359</td>
</tr>
<tr>
<td>Noorani Khojasteh H</td>
<td>P-269</td>
</tr>
<tr>
<td>Nezami N</td>
<td>P-308, P-369</td>
</tr>
<tr>
<td>Najafi I</td>
<td>P-347</td>
</tr>
<tr>
<td>Nagibi M</td>
<td>P-391</td>
</tr>
<tr>
<td>Niknam MH</td>
<td>P-377</td>
</tr>
<tr>
<td>Noroozi M</td>
<td>P-351</td>
</tr>
<tr>
<td>Namiri M</td>
<td>P-399</td>
</tr>
<tr>
<td>O</td>
<td></td>
</tr>
<tr>
<td>Quan D</td>
<td>O-10</td>
</tr>
<tr>
<td>Ormsby A</td>
<td>O-15</td>
</tr>
<tr>
<td>Orens JB</td>
<td>O-18</td>
</tr>
<tr>
<td>Ozcay F</td>
<td>O-30, O-54, O-55, P-7, P-11, P-167, P-168, P-172, P-175, P-332, P-334</td>
</tr>
<tr>
<td>Opelz G</td>
<td>O-36</td>
</tr>
<tr>
<td>Ozdemir RN</td>
<td>O-43, P-44, P-135, P-222, P-223, P-306, P-380</td>
</tr>
<tr>
<td>Ozkan M</td>
<td>P-23, P-25, P-27, P-99, P-190</td>
</tr>
<tr>
<td>Ozkan S</td>
<td>P-23, P-25, P-27, P-190</td>
</tr>
<tr>
<td>Ozcobanoglu S</td>
<td>P-23, P-25, P-27, P-190</td>
</tr>
<tr>
<td>Otukesh H</td>
<td>P-47, P-125, P-203, P-208, P-221, P-273, P-302, P-372, P-381</td>
</tr>
<tr>
<td>Ounissi M</td>
<td>P-59, P-278, P-304</td>
</tr>
<tr>
<td>Omidzohoor M</td>
<td>P-95</td>
</tr>
<tr>
<td>Oskuii J</td>
<td>P-6</td>
</tr>
<tr>
<td>Oakes WJ</td>
<td>P-108</td>
</tr>
<tr>
<td>Ozdemir H</td>
<td>P-123, P-274</td>
</tr>
<tr>
<td>Ozdemir BH</td>
<td>P-135, P-307</td>
</tr>
<tr>
<td>Owji N</td>
<td>P-160</td>
</tr>
<tr>
<td>Oncul S</td>
<td>P-177, P-253</td>
</tr>
<tr>
<td>Osareh S</td>
<td>P-213, P-362</td>
</tr>
<tr>
<td>Qureshi J</td>
<td>O-39</td>
</tr>
<tr>
<td>Oliaei</td>
<td>P-287</td>
</tr>
<tr>
<td>Ozcobanoglu S</td>
<td>P-307</td>
</tr>
<tr>
<td>Ozbek OY</td>
<td>P-332</td>
</tr>
<tr>
<td>Ozbay Hosnut F</td>
<td>P-334</td>
</tr>
<tr>
<td>Ozneri Ser</td>
<td>P-336</td>
</tr>
<tr>
<td>Oliaei F</td>
<td>P-360</td>
</tr>
<tr>
<td>P</td>
<td></td>
</tr>
<tr>
<td>Panekewycz O</td>
<td>O-6, P-57, P-105, P-386</td>
</tr>
<tr>
<td>Pour-Reza-Gholi F</td>
<td>O-1, P-72</td>
</tr>
<tr>
<td>Pooramiri MV</td>
<td>O-17</td>
</tr>
<tr>
<td>Pairered M</td>
<td>O-19</td>
</tr>
<tr>
<td>Paez G</td>
<td>O-32</td>
</tr>
<tr>
<td>Paul S</td>
<td>O-36</td>
</tr>
<tr>
<td>Pournasr B</td>
<td>O-49</td>
</tr>
<tr>
<td>Pehlivan S</td>
<td>O-52, P-9, P-134, P-230</td>
</tr>
<tr>
<td>Portugues C</td>
<td>O-61</td>
</tr>
<tr>
<td>Parsaie V</td>
<td>P-13</td>
</tr>
<tr>
<td>Parsa T</td>
<td>P-16, P-92, P-242, P-298, P-321</td>
</tr>
<tr>
<td>Name</td>
<td>Page Numbers</td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Shahidi Sh</td>
<td>P-244</td>
</tr>
<tr>
<td>Sozen H</td>
<td>P-253</td>
</tr>
<tr>
<td>Soleimani MJ</td>
<td>P-257</td>
</tr>
<tr>
<td>Simforosh N</td>
<td>P-273</td>
</tr>
<tr>
<td>Shiemorteza M</td>
<td>P-275</td>
</tr>
<tr>
<td>Shafie Z</td>
<td>P-277</td>
</tr>
<tr>
<td>Sagahi M</td>
<td>P-279</td>
</tr>
<tr>
<td>Shafiepour MR</td>
<td>P-281</td>
</tr>
<tr>
<td>Shishegar M</td>
<td>P-285</td>
</tr>
<tr>
<td>Seraji</td>
<td>P-286</td>
</tr>
<tr>
<td>Soltan Abadi M</td>
<td>P-294</td>
</tr>
<tr>
<td>Seirafanpour S</td>
<td>P-296</td>
</tr>
<tr>
<td>Samarei R</td>
<td>P-297</td>
</tr>
<tr>
<td>Sobhani N</td>
<td>P-308</td>
</tr>
<tr>
<td>Savaj</td>
<td>P-314</td>
</tr>
<tr>
<td>Shoushtarizadeh T</td>
<td>P-314</td>
</tr>
<tr>
<td>Shaban Azad M</td>
<td>P-317</td>
</tr>
<tr>
<td>Shirmami</td>
<td>P-317</td>
</tr>
<tr>
<td>Sabet B</td>
<td>P-318</td>
</tr>
<tr>
<td>Sabahi F</td>
<td>P-340</td>
</tr>
<tr>
<td>Siyadati S</td>
<td>P-341</td>
</tr>
<tr>
<td>Shaeiyan M</td>
<td>P-343</td>
</tr>
<tr>
<td>Shaker DS</td>
<td>P-345</td>
</tr>
<tr>
<td>Soylemezoglu O</td>
<td>P-385</td>
</tr>
<tr>
<td>Sindel S</td>
<td>P-385</td>
</tr>
<tr>
<td>Soleimanian</td>
<td>P-379</td>
</tr>
<tr>
<td>Sagahi H</td>
<td>P-378</td>
</tr>
<tr>
<td>Samadian F</td>
<td>P-374</td>
</tr>
<tr>
<td>Shaker DS</td>
<td>P-352, P-363</td>
</tr>
<tr>
<td>Shaheen FAM</td>
<td>P-363</td>
</tr>
<tr>
<td>Sharafi M</td>
<td>P-360</td>
</tr>
<tr>
<td>Shahin</td>
<td>P-358</td>
</tr>
<tr>
<td>Sfar</td>
<td>P-356</td>
</tr>
<tr>
<td>Salmani Nadooshan M</td>
<td>P-359</td>
</tr>
<tr>
<td>Sahbanzadeh Pirsaree A</td>
<td>P-359</td>
</tr>
<tr>
<td>Sohail MA</td>
<td>P-398</td>
</tr>
<tr>
<td>Solgi G</td>
<td>O-50, P-132, P-178</td>
</tr>
<tr>
<td>Swenson ES</td>
<td>P-398</td>
</tr>
<tr>
<td>Shamsavani M</td>
<td>P-399</td>
</tr>
<tr>
<td>Taheri Mahmoudi M</td>
<td>P-66</td>
</tr>
<tr>
<td>Tubbs RS</td>
<td>P-78, P-303</td>
</tr>
<tr>
<td>Tabei SZ</td>
<td>P-94</td>
</tr>
<tr>
<td>Taheri S</td>
<td>P-117, P-184, P-194, P-296, P-305, P-309</td>
</tr>
<tr>
<td>Taghizadeh</td>
<td>P-119</td>
</tr>
<tr>
<td>Tay H</td>
<td>P-119</td>
</tr>
<tr>
<td>Tarzamani MK</td>
<td>P-139, P-237, P-308</td>
</tr>
<tr>
<td>Taherimahmoodi M</td>
<td>P-148</td>
</tr>
<tr>
<td>Tara A</td>
<td>P-188</td>
</tr>
<tr>
<td>Tardeh</td>
<td>P-194</td>
</tr>
<tr>
<td>Tabatabee A</td>
<td>P-194</td>
</tr>
<tr>
<td>Tayebi H</td>
<td>P-198, P-289</td>
</tr>
<tr>
<td>Tofighi A</td>
<td>P-210</td>
</tr>
<tr>
<td>Taheri D</td>
<td>P-216, P-296</td>
</tr>
<tr>
<td>Tagizadeh A.A</td>
<td>P-219</td>
</tr>
<tr>
<td>Talachan E</td>
<td>P-221</td>
</tr>
<tr>
<td>Taghazadeh A</td>
<td>P-239</td>
</tr>
<tr>
<td>Toshik MR</td>
<td>P-248</td>
</tr>
<tr>
<td>Turgut Balci S</td>
<td>P-254</td>
</tr>
<tr>
<td>Taneri F</td>
<td>P-263</td>
</tr>
<tr>
<td>Torabi Nezhad S</td>
<td>P-277</td>
</tr>
<tr>
<td>Taheri AM</td>
<td>P-286</td>
</tr>
<tr>
<td>Trabelsi S</td>
<td>P-304</td>
</tr>
<tr>
<td>Tarzamani MK</td>
<td>P-369</td>
</tr>
<tr>
<td>Tarabadi F</td>
<td>P-343</td>
</tr>
<tr>
<td>Tahersima Z</td>
<td>P-391</td>
</tr>
<tr>
<td>Tarif N</td>
<td>P-390</td>
</tr>
<tr>
<td>Taghiabadi E</td>
<td>P-399</td>
</tr>
<tr>
<td>Tavangar SM</td>
<td>P-400</td>
</tr>
<tr>
<td><strong>U</strong></td>
<td></td>
</tr>
<tr>
<td>Uslu Y</td>
<td>O-23</td>
</tr>
<tr>
<td>Unlukaplan M</td>
<td>P-99</td>
</tr>
<tr>
<td>Ur Rahaman H</td>
<td>P-212</td>
</tr>
<tr>
<td>Unlukaplan A</td>
<td>P-254</td>
</tr>
<tr>
<td><strong>V</strong></td>
<td></td>
</tr>
<tr>
<td>Vakil H</td>
<td>O-15</td>
</tr>
<tr>
<td>Velayati A.</td>
<td>O-17</td>
</tr>
<tr>
<td>Valero R</td>
<td>O-32</td>
</tr>
<tr>
<td>Vojdani R</td>
<td>O-48, P-344</td>
</tr>
<tr>
<td>Valavi E</td>
<td>P-47, P-208</td>
</tr>
<tr>
<td>Vaezi M</td>
<td>P-72</td>
</tr>
<tr>
<td>Vallilollah Pour Amiri M</td>
<td>P-81, P-292</td>
</tr>
<tr>
<td>Velayati AA</td>
<td>P-81, P-292</td>
</tr>
<tr>
<td>Vogdani R</td>
<td>P-269</td>
</tr>
<tr>
<td>Valilollah Poor Amiri M</td>
<td>P-319</td>
</tr>
<tr>
<td><strong>W</strong></td>
<td></td>
</tr>
<tr>
<td>Wong K</td>
<td>O-10</td>
</tr>
<tr>
<td>Wall W</td>
<td>O-10</td>
</tr>
<tr>
<td>Wolner E</td>
<td>O-19, P-98</td>
</tr>
<tr>
<td>West LJ</td>
<td>O-20</td>
</tr>
<tr>
<td>Wilms C</td>
<td>O-27, P-176</td>
</tr>
<tr>
<td>Wahhabaghai H</td>
<td>P-41, P-42, P-66</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td></td>
</tr>
<tr>
<td>Yuzer Y</td>
<td>O-28, P-46</td>
</tr>
<tr>
<td>Yaprak O</td>
<td>O-28, P-46</td>
</tr>
<tr>
<td>Yagmurduz MC</td>
<td>O-52</td>
</tr>
<tr>
<td>Yaghobi R</td>
<td>P-17, P-18, P-179, P-180, P-206, P-262, P-264, P-329, P-342, P-344, P-375</td>
</tr>
<tr>
<td>Yarmohamadi AA</td>
<td>P-29, P-284</td>
</tr>
<tr>
<td>Younan F</td>
<td>P-68, P-258</td>
</tr>
<tr>
<td>Yilmaz U</td>
<td>P-83, P-165, P-175</td>
</tr>
<tr>
<td>Yazdani M</td>
<td>P-194, P-251, P-296</td>
</tr>
</tbody>
</table>
Yousefnejad A  P-213
Yavuz D  P-222
Yavarian M  P-329

Z
Zuckermann A  O-19, P-98
Zimpfer D  O-19, P-98
Zeier M  O-36
Zandi B  O-40, P-392
Zarka Z  O-44, P-129
Zakerinia M  O-48, P-18, P-179, P-269
Zamani N  P-32
Zahmatkesh M  P-34, P-71, P-383
Zafarshamspour S  P-52
Zargar MA  P-110
Zafar MN  P-138, P-245, P-271
Zober K  P-142, P-282
Zomorrodi A  P-218, P-299
Ziyaeyan M  P-252, P-340
Zargar Shoshtari MA  P-257
Zamani S  P-264
Zamirian M  P-267
Zeraati A  P-311