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Abstracts

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GLOBAL PRIORITIES FOR TRANSPLANTATION

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Whist it would appear that many developed countries have sophisticated transplant programs with good organ donor rates and excellent outcomes, there remains many challenges for the field. Although one year patient and graft survival has improved markedly over the past 20 years, five and 10 year outcomes have not changed since the 1980’s. This has become a major problem as large numbers of patients join already overburdened transplant waiting lists. Many of the causes of this problem are related to the inadequacies of current mainstream immunosuppression and renewed research and investment is urgently needed. However, just as we are beginning to realize the unmet needs of our current immunosuppression protocols there has been a rapid exodus of pharmaceutical companies willing to invest in this space. Added to this is the problem that many of the patients most in need of better immunosuppression are generally excluded from clinical trials of new immunosuppressive agents. Solutions to this problem are complex and involve major changes to clinical trial design, engagement with regulatory authorities to lower the cost and time burden for registration and more intelligent patient selection. As in other fields this crisis has produced opportunities. Mainstream immunosuppressive regimens are now much more affordable and hence are available to a wider range of patients worldwide. The relative lack of interest in our field by major pharma has left us an opportunity to organize global clinical trial networks that are investigator driven with a focus on our priorities.

The most important issue facing transplantation globally is a lack of access to transplantation compared to the many millions that would benefit from it. In 2011 only 0.04% of those on dialysis received a renal transplant. This is despite the fact that renal transplantation is cheaper and offers a superior survival to dialysis; a fact that is acknowledged by health authorities. The changes necessary to improve patient access need to be driven by our professional organizations. As a transplant community we must ensure each country and region has the following components that are essential for the expansion of access to transplantation:

- Appropriate legislation to underpin deceased and living donation including the prohibition of organ trafficking and commercialization
- The development of regulations to enable transplant legislation
- Oversight of organ donation and transplantation by the relevant Health Departments to ensure transparency and safety
- A fair, equitable and transparent organ allocation system
- Institution of organ donation and transplant registries
- Development of policies to ensure that organs are maximized and used by appropriately credentialed centers.

All these goals are achievable if we coordinate our efforts through professional societies and speak with a unified voice on these important issues.

DONOR FOLLOW-UP: KEY TO SUCCESSFUL TRANSPLANT PROGRAMME IN A DEVELOPING COUNTRY

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[Abstract not available]

ORGAN DONATION FROM THE DECEASED DONORS: PROACTIVE DETECTION PROGRAM

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There are several obstacles that remain challenging for organ donation from the deceased patients. These include medical, administrative, and ethical issues. The medical obstacles may include the failure of early recognition of possible donors and care for potential and actual donors. Proper care of the donors and expediting the process of consenting for donation cannot be overemphasized for maximizing utilization of the donated organs. The care rendered for the patients to ensure appropriate perfusion and nutrition of the organs should be followed up meticulously till the time of retrieval. The patients involved in accidents are presumed to be healthy and many of them do not have available medical history or files. Surprises at time of retrieval of unexpected infections or malignancy should be minimized by raising the index of suspicion of presence of serious conditions when we handle cases of organ donation, especially those with unknown medical history. The careful physical exam and appropriate and aggressive laboratory investigations may disclose the etiology of suspected clinical condition...
in the possible donors. The intensive care units (ICU) staff represent the main group of health care-takers who are directly involved in the process of organ donation. Appointing a coordinator for this group in each and every ICU of the organ donating hospitals may improve all the aspects of organ donation from the deceased patients and harmonize the efforts towards the goals mentioned above and surmount the obstacles encountered during the practice of organ donation from the deceased. We call this collaboration between the national program and the ICUs of the donating hospitals the Proactive Detection Program. We started this program in our country and hope that it will widely be adopted in the region as well.

L4
HOW SHIRAZ TRANSPLANT CENTER BECAME A HUGE CENTER

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Certainly, brain death approval and establishment of a network for organ allocation are the most important barriers to set up an organ transplantation center. To overcome these barriers we should prepare the community from social, cultural and financial points of view. Shiraz Transplant Center is a pioneer in transplantation in the Middle East region and is going to be one of the most advanced and large centers in the world.

Kidney transplantation started in 1967, Namzai Hospital in Shiraz. The first deceased donor liver transplantation in 1993, first case of live donor liver transplantation was done in 1998. First case of ex situ split liver transplantation in 2003, pancreas transplantation in 2006, in situ split liver transplantation in 2007, multivisceral and small bowel transplantation in 2010, and combined liver-kidney transplantation, combined liver-pancreas transplantation, and domino liver transplant all in 2014. Other complicated hepatopancreato-biliary surgeries, such as liver transplant and whipple at the same time for cholangiocarcinoma in addition to auto transplantation of liver (ex vivo resection of liver mass) and auto transplantation of small bowel have been performed in Shiraz.

The establishment of a good deceased donor network let us to develop our center as much as possible both qualitatively and quantitatively. We have performed 500 and 480 liver transplantations in 2013 and 2014, respectively.

This center has been known as a Fellowship Training Center by MESOT. Fellows of Hepato-Pancreato-Biliary and transplant surgery coming from five centers in Iran in addition to Sudan, Pakistan, Afghanistan, Tajikistan, Lebanon and Syria have been trained at Shiraz Transplant Center.

L5
TRANSPLANTATION IN KAZAKHSTAN

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The Republic of Kazakhstan is one of the leading countries between the members of Commonwealth of Independent States (CIS), with its developing socio-economic status and health care system. There are living over the seventeen million populations with 160 nationalities and Kazakhstan is multi-religious country located between two continents - Europe and Asia. In Kazakhstan, the first steps of organ transplantation started in the 80s of the last century. Over the last 5 years, there is a progressive development of transplantation in the whole country. On the other hand, we have good experience in stem cell transplantation for the past 10 years.

At the recent time, we have a national transplant coordinating center, which reports directly to the Ministry of Health and Social Development of the Republic of Kazakhstan. The national transplant coordinating center also cooperates with transplant centers, which provides organ transplantation and supporting centers, such as cadaveric organ donating hospitals, national center of air ambulance and HLA-Laboratories. To date, the number of transplant centers increased to 10, and 3 of them able to do multiorgan transplantation; the number of cadaveric organ donating hospitals increased to 37 and transplant activity rate in sum for the entire centers made up 9,22 p.m.p by 2013 year.

There are significant increases in the number of organ transplantation (kidney, liver, heart) from living and cadaveric donors for the last couple of years. For example, kidney transplantation from living donors increased from 56 to 164 (3 fold) cases and also from cadaveric donors increased from 1 to 18 between 2012 and 2014 years respectively; slight increase in liver transplantation from living donors from 17 to 25 (1.5 fold) and also from cadaveric donors - from 3 to 7 between 2012 and 2014 years respectively. The one of the main achievements in Kazakhstan was implementation of heart transplantation from cadaveric donors. During the last three years, number of heart transplantation increased up to 7 cases.
Despite this, the number of patients waiting for organ transplants in Kazakhstan remains. According to 2014 years report, in waiting list were registered 1787 recipients for adult and 20 for pediatric kidney transplantation, 542 recipients for adult and 13 for pediatric liver transplantation, 53 recipients for adult and 12 for pediatric heart transplantation.

There are some major problems existing organ transplantation in Kazakhstan:

- Deficit and lack of donor organs (especially cadaveric donors)
- Large distance between cadaveric organ donating hospitals and transplant center
- Insufficient HLA-laboratories
- Deficit of experienced transplant teams
- Lack of alternative immunosuppressive medications
- Insufficient post transplant patient care

Now we are working to solve these problems, and the following steps must be done before:

- Development activities aimed to promoting organ donation (organ donation programs)
- Ensuring the transplant and supporting centers with necessary medical equipment
- Opening the transplant centers and HLA-laboratories in major metropolitan regions of Kazakhstan
- Introduction to the active training program on transplantation in medical universities
- Training of transplant team (transplant surgeons, coordinators, physicians e.t.c.) in the countries with developed transplant programs
- International cooperation, the development of scientific research in the field of transplantation

In conclusion, for the last couple of years, Kazakhstan has achieved some success in the organization of transplantation and there is a noticeable trend in its improvement. Cooperation with international transplant societies, resolving the aforementioned problems and the beginning of the above listed steps can improve transplant services of Kazakhstan.

L6

ORGAN PROCUREMENT AMONG MUSLIMS: RELIGIOUS AND CULTURAL CONCERNS

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There is a shortage of organs needed for transplantation worldwide. Although all major religions consider saving lives a noble act, organ donation after death is not common among Muslims all over the world. There are several religious and cultural concerns which might contribute towards this attitude:

Respecting the deceased
Islam and many other cultures, particularly Eastern, stress on respecting the dead body and avoid any trespass or injury on it. The Prophet considered breaking the bone of the deceased like breaking it alive. Yet Islam allowed cutting open the abdomen of a deceased in order to save an unborn child or even to recover a precious object. Burial with complete set of organs seems to be an obsession with many Muslims approached for donation although certain accidents lead to death with incomplete body integrity.

Definition of death
Death is not defined clearly by religious scholars. If departure of soul signifies death, no one can define this moment and most religious literature describe the sign of rigor mortis when some time has passed. Despite a famous religious ruling in 1986 accepting brain death, the concept of brain death is still debated among scholars and the condition is still confused with deep coma.

Lack of donation culture
The major factor responsible for a low donation rate seems to be cultural rather than religious. Many Muslim countries, like Iran, Kuwait, Turkey and Saudi Arabia managed to increase donation rates to reasonable levels by developing specialized organ procurement organizations. Developing a donation culture in Muslim societies requires advocating organ donation in schools, public media and support from governments.
L7
EXPERIENCE WITH 500 CASES OF LIVING DONOR LIVER TRANSPLANTATION IN EGYPT

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The absence of a cadaveric liver transplantation program in Egypt has led us to start the first living donor liver transplantation (LDLT) program in Egypt in August 2001. Since then we have performed more than 650 cases of LDLT in three transplant programs.

This review is on 500 cases. This is mainly an adult program with only three paediatric cases and only three left lobe donations. The remaining 497 cases were right lobe donations of which two were for retransplants.

Donor safety has been of primary concern in our programs. Donors were 18 to 45 years of age with a mean of 30 and ABO-compatible but not identical. Liver biopsy was done routinely in all donors and 30% revealed abnormal findings in spite of normal tests stressing the importance of routine liver biopsy in donors.

There were no donor mortalities and donor complications were classified using the Clavien grading system with all complications within grades I and II a & b. The residual liver volume was always kept at or above 35. The mean age for recipients was 44 years, MELD 21 and BMI 26 with HCV constituting 96% of the cases. Associated Hepatocellular carcinoma (HCC) has been the indication in 23% of cases. Bridging and downstaging procedures were undertaken as appropriate. Biliary complications have been an initial challenge being a cause of mortality in 0.5% and morbidity in > 10% of cases in the initial 130 cases analyzed. Modification of the surgical techniques and selection criteria has eliminated the mortality from biliary complications in LDLT and reduced biliary complications to less than 15%.

Technical modifications have greatly improved the results with a 90% three months survival and 85% one year survival. We will present those technical modifications.

L8
INFECTIOUS COMPLICATIONS OF SOLID ORGAN TRANSPLANTATION (SOT)

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The transplant procedure itself and subsequent immunosuppression increase the risk of serious infection. The principal factors determining the type and severity of infection are the intensity of epidemiologic exposure (in the hospital and community) to potential pathogens and the overall state of immunosuppression. Factors affecting the net state of immunosuppression include the cumulative amount of immunosuppression, recipient comorbidities (e.g., diabetes, UTIs), infection of viruses that affect the immune system (e.g., EBV, CMV, HIV, hepatitis C), and the integrity of mucocutaneous barriers. The patterns of infection after SOT can be roughly divided into three time periods: 0 to 1 month, 1 to 6 months, and more than 6 months after transplant. Early aggressive diagnosis and therapy are mandatory.

Infections in the First Month
Most infections in the first month are standard infections, as would be seen in nontransplant patients after surgery composed of: infections of surgical wounds, the lungs, and the urinary tract. Bacterial infections are much more common than fungal ones. Preventive measures include ensuring that donor and recipient are free of overt infection before transplant, good surgical technique, and TMP-SMX prophylaxis to prevent UTIs.

Infections from 1 to 6 Months after Transplant
As immunosuppression is high in this period, opportunistic infections are more common including: CMV, EBV, Listeria monocytogenes, P. carinii, and Nocardia spp. Preventive measures include antiviral prophylaxis (for 3 to 6 months) and TMP-SMX prophylaxis (for 6 to 12 months).

Infections More than 6 Months after Transplant
With gradual reduction in immunosuppression, the risk of infection long-term usually diminishes. However, patients can be roughly divided into two groups based on risk. In those with good ongoing allograft function and no need for late supplemental immunosuppression are at low risk for developing opportunistic infections unless exposure is intense (e.g., to Nocardia spp. from soil). In contrast, those with poor allograft function are at higher risk for opportunistic infection. This probably reflects both poor allograft function and that many of these patients have received large cumulative doses of immunosuppression. Late amplification of immunosuppression may increase the risk of opportunistic infection in any patient. Viruse
Infections may arise from (1) reactivation of latent recipient virus, (2) primary infection with donor-derived virus or (3) reactivation of latent donor-derived virus. CMV disease means that there is infection with symptoms or with evidence of tissue invasion, or both. The risk of CMV infection or disease is highest in CMV-positive donor/CMV-negative recipient pairings. ATG particularly when prescribed for treatment of rejection, significantly increases the risk of subsequent CMV disease. CMV disease usually arises 1 to 6 months after transplantation, although gastrointestinal and retinal involvement often occurs later. Detection of CMV in blood or tissue fluids is best achieved by antigenemia or molecular assays. Low or negative CMV concentrations in peripheral blood do not exclude organ involvement (especially of the gastrointestinal tract); procedures such as bronchoscopy and endoscopy should be aggressively pursued according to symptoms and signs. The virus is best identified in involved tissue by immunohistochemistry techniques. In addition to its direct effects, CMV may have indirect effects after transplant: increase risk of infection, rejection, and PTLD. CMV disease should be treated with reduction in immunosuppression and IV antiviral therapy for 2 to 3 weeks (if infection is severe), followed by oral antiviral therapy for 3 to 6 months. The agents of choice for IV and oral (PO) treatment are ganciclovir and valganciclovir, respectively.

Antimicrobial prophylaxis is also effective in preventing pneumonia caused by P. carinii. The agent of choice is TMP-SMX. It is generally well tolerated and inexpensive; furthermore, it prevents UTIs and opportunistic infections such as nocardiosis, toxoplasmosis, and listeriosis. Alternative preventive agents include dapsone and pyrimethamine, atovaquone, and aerosolized pentamidine. Because the organism burden is usually lower than in human immunodeficiency virus (HIV)–infected patients, the sensitivity of induced sputum or bronchoalveolar lavage specimens is lower in kidney transplant recipients; tissue should be quickly obtained if these tests are negative and the clinical suspicion remains high. The treatment of choice remains TMP-SMX. There is no firm evidence to support the use of higher dose steroids.

**Immunization in Kidney Transplant Recipients**

Important general rules concerning immunization in kidney transplant patients are the following: (1) Immunizations should be completed at least 4 weeks before transplantation; (2) immunization should be avoided in the first 6 months after transplant because of ongoing high doses of immunosuppression and a risk of provoking allograft dysfunction; and (3) live vaccines are generally contraindicated after transplantation. Household contacts of transplant recipients should receive yearly immunization against influenza.

**Summary**

Infections are a predictable complication of kidney transplantation. Minimizing infections requires meticulous surgical technique, antiviral prophylaxis for the first 3 to 6 months, TMP-SMX prophylaxis for the first 6 to 12 months and, of course, avoidance of excess immunosuppression. A substantial increase in immunosuppression, no matter what the time period after transplant, should trigger resumption of TMP-SMX and probably antiviral prophylaxis.

**L9
SETTING UP A TRANSPLANT PROGRAMME**

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Starting a transplantation programme is a major endeavour more complex than starting other programmes such as cardiac, vascular or any other medical specialty. It requires a high degree of functionality from many other specialties in the hospital. It is a major challenge. It is the most difficult medical programme to initiate because its success depends on the prevailing legislative, social and cultural environments. The initial few people and the leader who agree to start a transplantation programme will experience much excitement, exhilaration, exasperation, frustration, absolute dejection and continuous rejection....

Medical expertise and financial support needs. It requires intricate network of physicians, surgeons, nurses, technicians, lab personnel and administrators. The maturity and technical expertise of the surgeon is of utmost importance. The hospital and the programme may recover from one bad outcome but recovering from a second or third outcome is very difficult. Acquiring or training all the personnel who are responsible for providing crucial support for the transplant is essential. Creating favourable social, legal, cultural environments is vital to the success of a transplant programme.

It is essential to establish perioperative processes for all surgical specialities. Protocols and guidelines developed for preoperative, intraoperative and postoperative management need to be very resilient. Resistance comes from many quarters and is prevalent in any large organisation and in any country. One needs to have specialised equipment, extensive and trained personnel, and you cannot do transplantation without an HLA Lab that is intimately familiar with the latest in molecular and cellular immunology and immunosuppression. Establishing the organ procurement infrastructure is an absolute requirement, in addition to legislation codifying brain death and organ donation and comprehensive educational and information campaign.

No organs = No Transplants!  
Once achieved it is very satisfying and rewarding. The benefits experienced are tremendous!
L10

PANCREAS TRANSPLANTATION

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The purpose of pancreas transplantation is to improve the quality of life and ameliorate secondary complications by establishing an insulin-independent, euglycaemic state in patients with Type I diabetes mellitus by engrafting insulin producing beta cells. It is the only treatment able to induce consistent insulin independence and normalise glycosylated haemoglobin.

Renal allograft recipients must receive immunosuppression, as there is no reason not to make them insulin-independent as well as dialysis-free.

The Pancreas transplant recipient categories are

PTA = Pancreas Transplant Alone
PAK = Pancreas After Kidney
SPK = Simultaneous Pancreas/Kidney

The metabolic effects are insulin independence, euglycaemia, and normal glycohaemoglobin. The effect on recurrence of diabetic nephropathy in kidney grafts are improved nerve conduction, normoglycaemia improved nerve conduction after transplantation.

Longterm prognosis after the first year is excellent and warrants wider application in selected patients (n=57). Ten year actuarial patient, kidney and pancreas graft survival were 93%, 82% and 79%, respectively (RJ Stratta et al, 1997).

In summary, pancreas transplantation should be offered to all uremic diabetic patients so that they can become insulin-independent as well as dialysis free. Integration of kidney and pancreas programmes has allowed maximal flexibility in the treatment of the diabetic patient.

L11

ORGANIZATION OF ORGAN DONATION AND TRANSPLANTATION IN JORDAN

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Although Jordan is one of the few countries in the region who issued legislation for organ donation and transplantation and started organ transplantation in the early 1970s, unfortunately till recently there was no official governmental body that is regulating this process. The transplantation program is mainly of living related donors (99%), with decreasing activity for Jordanian citizens and increasing for non Jordanian and being more active in private sector.

On October 2011 the government established the Jordanian center of organ transplantation directorate in the ministry of health, aiming at organizing the organ transplant services. The main goals of this directorate are:

1. Supervising organs transplantation programs in health care facilities in the kingdom in the field of organs donation, procurement and transplantation and coordinate efforts between these facilities.
2. Encouraging organs donation and raise awareness in community in this field.
3. Establishing database connects with hospitals and centers concerned in organ donation and transplantation.
4. Establishing national registry for organs donation and transplantation contains all personal information of patients, donors, and recipients.
5. Co-ordination and follow-up of all brain- death cases from different hospitals in the kingdom as well as harvesting and distribution of organ in accordance to the procedures manual that prepared for this purpose.
6. Research and studies about organs failure and organs transplantations.
7. Preparing programs for training and scientific meetings in the field of organs transplantation and follow up of the result with conserved facilities.
8. Publication of scientific bulletins as well as exchange of visits and information with international centers in the field of organs donation and transplantations.
9. Conducting studies and research in the field of diseases that lead to end- stage organ failure to enable the authorities to provide better health care to the patients.
10. Laying down criteria concerning establishment of organs transplant centers as well as continuous evaluation of these centers.

During the last three years the followings has been achieved:

1. Training physicians in the field of organ donation and transplantation in a well-recognized transplant centers in the world (Italy, Turkey, France).
2. Training of medical, administrative transplant coordinators in different health care facilities.
3. Workshops in brain death diagnosis and deceased donor management were conducted.
4. Biweekly visit to the different universities and colleges conducting meeting with teaching staff and students.
5. Weekly interview with mass media.
6. Edition of a directory (manual) for organ donation and transplantation

We hope that we will see an obvious success in the field of organ donation and transplantation in the country in the nearest future.
Liver transplantation (LT) is the treatment of choice for patients with unresectable hepatocellular carcinoma (HCC) complicating liver cirrhosis because it allows the cure of both the tumor and the underlying chronic liver disease. After admission to the waiting list for LT, HCC patients can experience tumor growth beyond the conventional transplant criteria.

Several therapeutic procedures have been proposed as bridging treatments for patients with hepatocellular carcinoma awaiting liver transplantation. Transarterial chemoembolization (TACE) and radiofrequency ablation (RF) are the most used modalities. TACE has been extensively used in the past as a bridging treatment to LT. TACE is an effective therapy in terms of adequate tumor necrosis achievement at explant analysis.

Although percutaneous alcohol injection therapy (PEIT) was effectively applied for small HCC as ablation therapy, but it has been rarely used as a bridging treatment to transplantation. Percutaneous laser ablation (PLA) has recently been shown to be an effective technique for the ablation of HCC in patients in whom surgical resection is not possible or appropriate.

Surgical resection has also been successfully used as a bridging treatment to LT and should be considered a rescue treatment in patients with previous HCC resection who experience tumor recurrence or post-treatment severe decompensation of liver function.

Both surgical resection and locoregional therapies can be used not only as bridging procedures to LT in T2-HCC patients but also to downstage HCC patients who do not initially meet the conventional transplant criteria.

The aims of bridging treatments include decreasing the waiting list dropout rate before transplantation, reducing HCC recurrence after transplantation, and improving post-transplant overall survival. The bridging treatments for patients with hepatocellular carcinoma within Milan criteria listed for liver transplantation are useful in decreasing dropout rate from the waiting list and the experiences reported to date suggest a positive impact on post-transplant tumor recurrence and patient survival, tumor recurrence and patient survival. HCC patients listed for LT within the Milan criteria, prolonging the waiting time over 6-12 mo is a risk factor for tumor spread. Bridging treatments are useful in containing tumor progression and decreasing dropout. Furthermore, the response to pre-LT treatments may represent a surrogate marker of tumor biological aggressiveness and could therefore be evaluated to prioritize HCC candidates for LT. Bridging treatments reduce the rate of dropout from the waiting list.

Steroids, since their introduction as savior for skin transplantation in 1950s, have been the backbone of any renal transplantation protocols. It has reduced the rate of acute rejection and minimized the graft loss. As the same time it has an adverse effect on patient outcomes as metabolic syndrome, obesity, hypertension and dyslipidemia.

There has been a lot of data in the literature to cut back the adverse effects of steroids by steroid avoidance or steroid minimization protocols.

In this presentation we will review the data and different protocols effect on the short and long term effect on the graft and patient survival.

Infections are the commonest and most serious medical complication after transplantation, they are responsible for a significant percent of morbidity and mortality. Viruses are among the most common causes of opportunistic infections after transplantation, the risk of viral infection is a function of the specific virus encountered, the intensity of the immunosuppression medications used to prevent graft rejection and other host factors governing susceptibility.

Although Cytomegalovirus is the most common opportunistic pathogen seen in transplant recipients, numerous other viruses have also affected outcomes.
In some cases, preventive measures such as pre-transplant screening, prophylactic antiviral therapy or post transplant viral monitoring may limit the impact of these infections, recent advances in laboratory monitoring and antiviral therapy have improved outcomes.

Studies of viral latency, reactivation and cellular effects of viral infection will provide clues for future strategies in prevention and treatment of viral infection.

This presentation will summarize the major viral infections seen following transplant and discuss strategies for prevention and management of these potential pathogens.

L15
PANCREAS TRANSPLANTATION
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[Abstract not available]

L16
PECULIARITIES OF TUBERCULOSIS IN KIDNEY RECIPIENTS POPULATION: REVIEW OF ARTICLES
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Renal transplant is becoming increasingly available in developing & under developing countries with increasing rate of success due to advent of newer & more effective immunosuppressant.

The incidence of TB in kidney recipient population is high in the first year after transplantation and it is directly proportional to its prevalence in general population & it remains as a major cause of morbidity & mortality in this population.

TB poses peculiar challenges in the post-transplant setting especially in developing countries where the burden is high.

Our objective is to review the existing literatures on post kidney transplant tuberculosis to highlighting the peculiarities of TB after kidney transplantation especially as it applies to developing countries to draw attention of all kidney clinician to have high index of suspicion of tuberculosis for early diagnosis & treatment to improve graft & patients survival.

L17
DONOR FOLLOW-UP: KEY TO SUCCESSFUL TRANSPLANT PROGRAMME IN A DEVELOPING COUNTRY
Ahmet Gürakar

[Abstract not available]

L18
DIAGNOSIS AND EPIDEMIOLOGY OF RENAL DISEASE
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Chronic renal failure is one of the most important and most common public health problem that is usually underestimated in daily clinical practice. Including early renal failure stages (stage 1-3) and according to criterias included for definition its' prevalence might rise up to %15-20 in a given population. But due to its’ obscure nature and unspecific symptoms chronic renal failure is usually diagnosed at later and untreatable stages. Early diagnosis and appropriate treatment in early stages of chronic renal failure is extremely important for avoiding increased mortality in end stage renal disease patients which is usually secondary to increased prevalence of cardiovascular events. Knowledge of etiological and epidemiological characteristics of chronic renal disease is an important factor for early diagnosis and appropriate treatment of this syndrome.

L19
APPROACH TO A PATIENT WITH HEMATURIA
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Microscopic hematuria is defined as the presence of three or more red blood cells per high-powered field on microscopic examination in a properly collected, non-contaminated urinalysis with no evidence of infection. Additionally, benign cases such as menstruation, vigorous exercise, viral illness, trauma and infection have been included. The prevalence of microhematuria is >2%. The prevalence increases in males with age and smoking. The etiology may be nephrologic or urologic. Overall, urinary tract malignancy is 2.6%. In patients with macroscopic hematuria, the risk of malignancy is lower. In 10% of patients with malignant disease, there
is a renal parenchymal disease as well. The presence of urinary casts, proteins and/or dysmorphic cells suggests renal causes of hematuria, such as glomerulonephritis. Risk factors for urinary tract malignancy in patients with microhematuria include male gender, age, smoking, chemical and chemotherapeutic exposure, analgesic abuse, history of gross hematuria, urologic disorder, voiding symptoms, pelvic irradiation, chronic urinary tract infection and chronic indwelling foreign body. Complete evaluation of microscopic hematuria includes history and physical examination, laboratory analysis and radiologic imaging of the upper urinary tract followed by cystoscopy. In women, urethral and vaginal examinations should be performed to exclude local causes of microscopic hematuria. Renal functions should be evaluated. Dysmorphic red blood cells, proteinuria, cellular casts and/or renal insufficiency indicating renal parenchymal disease warrants nephrologic work up. All patients >35 years of age or with above-mentioned with risk factors with microscopic hematuria should undergo cystoscopy. Multi-phasic computed tomography urography is the imaging procedure of choice. Alternative procedures are magnetic resonance urography combined with retrograde pyelogram. For persistent asymptomatic microscopic hematuria with negative urologic work up, yearly urinalysis is recommended.

**L20**

**APPROACH TO A PATIENT WITH PROTEINURIA**

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Proteinuria could be the first and the only finding of chronic renal disease. It might have many etiologies that range from benign ones that usually do not advance to chronic renal failure to malign ones that could advance end stage renal disease in a short period of time. Not only a finding of renal disease, proteinuria is closely related with cardiovascular mortality and endothelial dysfunction. However due to its obscure nature proteinuria might be overlooked in daily clinical practice or not be recognized until the later stages of renal failure. Increased mortality rates in chronic renal failure patients make early diagnosis and treatment extremely important. Appropriate approach and taking necessary treatment measures for proteinuria is one of the most important step for the treatment of chronic renal disease.

**L21**

**DIALYSIS MODALITIES**

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Currently, more than 80% of the world’s end stage renal disease patients are treated with conventional, facility-based three times weekly conventional haemodialysis), whereas peritoneal dialysis remains the most common form of home-based renal replacement therapy.

The conventional treatment is prescribed as 3-4.5 h of dialysis, three times a week. However, this prescription is being questioned because of poor patient outcomes including a persistently high death rate. Over the past 30 years, K(t)/V(urea) has been recognized as the predominant marker of dialysis adequacy. However, other important markers of ‘adequate’ dialysis are increasingly being recognized, including fluid and phosphate balance, and middle molecule removal. Conventional HD therapy, as it exists today, is limited in its scope to make a significant impact on these markers.

Consequently, there is an active debate on novel HD strategies to improve patient outcomes. Frequent short and long nocturnal dialysis are also limited in their application by a higher economic burden and logistical difficulties.

While usage of high-flux membranes enables the removal of larger uraemic toxins and has been related to better outcomes in retrospective studies. The current evidence suggests a beneficial effect of online postdilution hemodiafiltration (HDF) over hemodialysis in reducing all-cause and cardiovascular mortality. Moreover, evidence is obtained supporting a dose–response relationship between the magnitude of the convection volume and mortality risk: the larger the convection volume, the better the outcome.

**L22**

**CARDIOVASCULAR DISEASE IN DIALYSIS PATIENTS**

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Cardiovascular disease poses the greatest risk of premature death seen among patients with chronic kidney disease (CKD). Up to 50% of mortality risk in the dialysis population is attributable to cardiovascular disease and the largest relative excess mortality is observed in younger patients. Pathogenesis includes close linkage between heart and kidneys and involves traditional and non-traditional cardiovascular risk factors.
Vascular calcification (VC) is considered a cardiovascular risk marker, so in CKD patients screening for the presence of VC is suggested in current guidelines. VC is the result of both passive and active processes that involve a variety of proteins and factors. In the CKD population, numerous studies have identified circulating biomarkers potentially responsible for VC and have evaluated their link with this process, such as phosphate, fibroblast growth factor 23 (FGF23), osteopontin (OPN), osteoprotegerin (OPG), matrix Gla protein and fetuin A.

In early CKD, occlusive thrombotic coronary disease is common, but those who survive to reach end-stage renal failure requiring dialysis are more prone to sudden death attributable mostly to sudden arrhythmic events and heart failure related to left ventricular hypertrophy, coronary vascular calcification and electrolyte disturbances.

**L23**
**PHOSPHORUS CONTROL IN END STAGE RENAL DISEASE**

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Phosphate homeostatic mechanisms maintain normal phosphorus levels until late-stage chronic kidney disease (CKD), because of early increases in parathyroid hormone (PTH) and fibroblast growth factor-23 (FGF-23). Serum phosphorus did not start rising until CKD 3b in contrast with the earlier changes observed with FGF-23, Klotho, calcitriol and PTH.

Phosphate is a novel cardiovascular risk factor in both CKD and in the general population, and a growing body of literature suggests that high normal serum phosphate may be a risk factor for progression of CKD. Therefore increased serum phosphorus together with mineral abnormalities contributes to bone disease, vascular calcification, and cardiovascular disease.

Early CKD-MBD management includes dietary phosphate restriction, phosphate binder therapy, and vitamin D supplementation and calcimimetics. Controlling phosphorus may be the most beneficial approach because this can reduce serum PTH, and FGF-23 and prevent long term complications. Phosphorus control involves dietary measures, but these are not always sufficient, and it can be more effective to also consider phosphate binder use. Effective control of hyperparathyroidism and an adequate scheme of dialysis are also mandatory for a better management of phosphorus levels. It has recently been shown that nutrition education, focused on elimination of processed foods, is very feasible and effective in dialysis patients.

Despite the introduction of new phosphate binder agents, hyperphosphatemia continues to be extremely common in CKD patients. Although phosphate binding agents have been proved to be effective in reducing serum phosphorus, their influence on clinical outcomes remain controversial.

**L24**
**HEMODIALYSIS AND PERITONEAL DIALYSIS IN THE WORLD**

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Hemodialysis and peritoneal dialysis are only possible renal replacement treatment modalities in end stage renal disease patients who cannot receive a successful renal transplantation. Hemodialysis could be performed in center or in patients' house while peritoneal dialysis is a house treatment option. Peritoneal dialysis also has manual and automated options. Both modalities have advantages and disadvantages compared to each other. Both modalities could be easily modified and adjusted according to patients' daily requirements. Peritoneal dialysis is the treatment choice for about 10% of end stage renal disease patients all around the world. However some countries encourage peritoneal dialysis option due to socio-economical factors. Choice between them usually depends on patients' clinical characteristics, requirements, doctors' previous clinical experience and socio-economical factors or health policies of countries.

**L25**
**NUTRITION IN ACUTE RENAL FAILURE**

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Acute renal failure is defined as a sudden decline in glomerular filtration rate with accumulation of metabolic waste products, toxins, and drugs. Mortality can be as high as 80%, with numerous contributing causes including infection, cardiorespiratory complications, and cardiovascular disease. Acute renal failure not only affects water, electrolyte and acid–base metabolism but also induces a global change of the "milieu interieur", with specific alterations in protein and amino acid, carbohydrate and lipid metabolism. Patients with acute renal failure require early nutrition intervention to attenuate the inflammatory response and oxidative stress, improve endothelial function, stabilize blood sugar, and preserve lean body mass.
The basic principles for nutritional support in acute renal failure cover the catabolism of the underlying disease, the renal replacement technique used, and the presence of previous malnutrition, and is poorly modified by renal failure itself. Patients with normal catabolism receive conventional treatment, stable patients with a moderately increased catabolism are treated with intermittent hemodialysis, and those with a hypercatabolic status are treated with continuous renal replacement techniques.

An energy intake of 35 kcal/kgBW/day is associated with better nitrogen balance (A) and is recommended in stable CRF patients in the range of ideal body weight. In patients with normal catabolism (urea nitrogen below 10 g/day) and preserved diuresis, conservative treatment can be planned. In these patients, relatively 0.6-0.8 g proteins/kg/day nutritional support is essential, using proteins with high biological value and limiting fluid and electrolyte intake according to the patient’s individual requirements. When continuous renal replacement techniques are applied to hypercatabolic renal failure patients, a supply of 1.3-1.5 g of proteins/kg/day should be planned and protein losses secondary to the dialysis technique used should be added.

If possible nutritional support should be administered by digestive route. Many patients with low catabolism can tolerate oral diet, alone or with supplements, but critically-ill patients generally require enteral nutrition. If there is any contraindication to it, total parenteral nutrition can be administered.

L26
ANEMIA, IRON AND ESA USE IN DIALYSIS PATIENTS
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Anemia is one of the most important consequences of end stage renal disease. It is also closely related with complications like increased cardiovascular mortality, decreased life quality and loss of cognitive functions. Rational treatment of anemia requires excluding other underlying etiologies, treating renal disease related complications that could exaggerate anemia (like chronic inflammation, hyperparathyroidism etc.) and appropriate combination of iron and erythropoiesis stimulating agents (ESA). Iron replacement alone usually does not solve anemia problem and the majority of ESRD patients still require ESA for reaching desired hemoglobin levels. With the use of ESA in the last 50 years anemia became a treatable problem. In this presentation, main principles for iron replacement, ESA treatment and new generation ESA options will be summarized.

L27
RENAL DISORDERS IN PREGNANCY
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19 Mayıs University Faculty of Medicine, Samsun, Turkey

The urinary system undergoes significant physiologic and anatomic changes during normal pregnancy. Kidney size increases by about 1-1.5 cm. Glomerular filtration rate (GFR) increases immediately after conception, resulting in significant hyperfiltration and mild proteinuria. Understanding the physiologic changes and disorders that occur in women with renal disease in pregnancy forms the basis of appropriate management of these unusual disorders.

Pregnancy-specific renal disorders arising include the following:
- Gestational hypertension, Preeclampsia/eclampsia/HELLP syndrome
- Acute fatty liver of pregnancy, Hemolytic-uremic syndrome
- Thrombotic thrombocytopenic purpura, Prerenal azotemia
- Acute tubular necrosis, Renal cortical necrosis
- Asymptomatic bacteriuria, Pyelonephritis
- Proteinuria.

These patients should be monitored carefully in blood pressure, kidney function tests, and a 24-hour urine protein collection, transaminases, hemogram; obstetric follow-up should be done frequently.

L28
PREGNANCY IN PATIENTS WITH KIDNEY DISEASE
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Achieving motherhood for women with chronic kidney disease (CKD) is challenging because as the fertility declines, severity of CKD progresses, and the risk of adverse fetal and maternal outcomes (fetal loss, pre-eclampsia, premature birth) substantially increases. Fully-informed pre-pregnancy counseling is essential, and if pregnancy occurs, intensive antenatal monitoring and management is critical.

There are two questions that need to be addressed when a woman with underlying kidney disease becomes pregnant: “What is the effect of pregnancy on the kidney disease?” and “What is the effect of the kidney disease on pregnancy?”

Renal function may decline as a result of pregnancy among patients with renal disease, determined in part by the severity of underlying renal disease. An elevated plasma creatinine concentration (above 1.5 mg/dL) and hypertension are the major risk factors for permanent exacerbation of underlying renal disease.
The effect of preexistent renal disease on the course of pregnancy is somewhat better established. Pregnant women with CKD of any stage have up to a 5-fold higher risk of adverse fetal events and a 2-fold higher risk of adverse maternal events overall. The degree of increased risk is closely linked to the severity of renal impairment pre-pregnancy. However, even women with stage 1–2 CKD have a significantly higher risk of adverse events compared with women without CKD. Compared with the general population, women with CKD, particularly stage 3–5, have higher rates of fetal loss, pre-eclampsia, and prematurity.

Although kidney transplantation can restore fertility, pregnancy complications remain high, particularly prematurity. Patients with renal disease should be monitored collectively by a nephrologist and by an obstetrician experienced about the effects of renal disease on pregnancy. General principles of management include increased frequency of prenatal visits; early detection and treatment of asymptomatic bacteriuria; serial monitoring of maternal renal function and for the treatment of hypertension; monitoring for the development of preeclampsia; and fetal surveillance with ultrasound and fetal heart rate. Preterm intervention may be necessitated by deteriorating renal function, severe preeclampsia, fetal growth restriction, or unreliable fetal testing.

L29
DIALYSIS PRESCRIPTION AND ADEQUACY
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All hemodialysis patients should have regular global assessments of dialysis adequacy. (Assessment of hemodialysis adequacy should include urea clearance, volume control, blood pressure, mineral metabolism, and clinical symptoms.

The following recommendations are from the 2006 Kidney Disease Outcomes Quality Initiative (K/DOQI) guidelines for hemodialysis patients with minimal residual renal function (<2 mL/min per 1.73 m²); minimally adequate dose should be a single-pool Kt/V of 1.2 or percent reduction of urea (PRU) of 65% and target recommended dose should be a single-pool Kt/V of 1.4

Nowadays, although Kt/Vurea targets are fulfilled, individuals on hemodialysis continue to experience a high rate of complications, including hypertension, left ventricular hypertrophy, cardiac failure, hyperphosphatemia, malnutrition and death. Although no randomized controlled trial has yet been published, observational data indicate that increasing hemodialysis time and/or frequency improves a number of these complications, especially the death rate. There is growing interest worldwide in the beneficial effects of increasing the frequency and/or time of haemodialysis sessions. Alternative HD regimens likely offer advantages over conventional thrice-weekly HD. Alternative regimens include short-daily HD (typically performed 1.5–3 h, 5–7 days per week) and nocturnal HD (typically 6–8 h, 3–7 nights per week). Both regimens can be performed at home or in the hospital setting.

Although the very few prospective randomized controlled trials evaluating treatment time and/or Kt/Vurea have been considered negative, including the Hemodialysis Study, the preponderance of evidence from decades of observational studies supports the finding that more dialysis per week, whether achieved with extended or more frequent treatments, results in fewer hospitalizations and better survival.

L30
DRY WEIGHT AND BLOOD PRESSURE REGULATION IN DIALYSIS PATIENTS
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Management of hypertension in dialysis patients requires attention to both management of fluid status and adjustment of antihypertensive medications. Optimal blood pressure is defined when pre and post-dialysis BP is < 150/90 mmHg without therapy or the ambulatory day BP monitoring < 135/85 without therapy or the ambulatory nighttime BP monitoring < 120/80 without therapy. Whether control of hypertension translates into better outcomes is not known, but collective evidence suggests that hypertension should be controlled in hemodialysis patients. For better control of hypertension in a dialysis unit, excessive fluid accumulation between dialysis sessions should be managed with education and regular counseling by dietitians, low sodium intake, increased ultrafiltration and longer dialysis.

The chronic exposure to fluid overload and hypertension may lead to cardiac stiffness and left ventricular hypertrophy. Objective methods have been developed to provide reliable and accurate estimates of the dry weight. These are blood volume monitoring, natriuretic peptide measurements, extravascular lung water indices, and bioimpedance methods. Bioimpedance device technology is based on passing a bioelectrical current through the body, and it estimates the body fluid volume by the amount of resistance this current endures in the body tissues. Several studies have showed that this method is accurate and reliable for the assessment of body fluids.
By a classical definition, renal osteodystrophy could be described as bone disease that develops on the basis of decreased vitamin D synthesis, decreased phosphorus clearance and hyperparathyroidism. Phosphate binding agents and vitamin D are still the main treatment options while new generation agents like calcimimetics are also widely used in many countries. On the other hand renal osteodystrophy is a complex syndrome and an important complication of end stage renal disease that not only causes bone disease, but also increases risk for metastatic calcification related complication like cardiovascular and peripheral vascular diseases. So knowledge of target values for phosphorus, calcium and parathyroid hormone and how to achieve these targets is not only important for treating renal osteodystrophy but also important for decreasing cardiovascular mortality.
**O1 RECONFIGURING THE DECEASED DONOR PROGRAM IN INDIA**

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**Introduction:** According to well established practices around the world, non-renewable organs for transplantation must be removed only from dead donors. An ethically sound policy on dead donor transplantation is dependent upon the definition of human death. It cannot be denied that cultural, religious and ethical issues play a pivotal role in forging society’s opinion regarding alternative definitions of death. In order to increase the deceased donor pool, India has also given legal recognition to the neurologic criterion of diagnosis of death. However, the country still grapples with the ever increasing demand for human organs available for transplantation.

The recognition of brain death in India by the Transplantation of Human Organs and Tissues Act 1994 marks a paradigm in our understanding related to concepts about death. The paper seeks to understand the limiting factors behind the deceased donor program in India. It analyzes the factors that restrain doctors in India from retrieving organs from brain dead patients. The aim of the paper is to decipher the patterns of adherence to clinical criteria of certifying brain death in patients in Indian government hospitals. The paper addresses pertinent questions in the field of organ transplantation in India like organ allocation criteria, diagnosis of death and its implications upon the deceased donor transplantation program in India.

**Materials and Methods:** Applications were filed under Right to Information (RTI) Act 2005 to understand the reasons behind the failure of deceased donor programs in India. Information received was qualitatively analyzed to find out reasons for the failure of deceased donor program in India.

**Results:** The paper highlights that recognition of brain death has not yet gained acceptance in India. Most of the government hospitals have no data on cases of brain death during the specific time frame asked in RTI application. Also there is lack of consensus among government hospitals regarding guidelines to be followed while declaring brain death. There is no single allocation policy in India regarding distribution of organs that are retrieved from deceased donors. Even after the recognition of brain death in 1994 by law in India, awareness regarding this new criterion of death is lacking.

**Conclusions:** The paper will be instructive to transplant surgeons, legislators and other stakeholders in the field of organ transplantation. It suggests ways and means to catalyze the organ donation program in India and provides a basis for a rational, sound and ethical system of procuring organs from deceased donors.

**O2 STATE TRANSPLANT SERVICES IN THE REPUBLIC OF UZBEKISTAN**

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Development of transplantation in the last quarter of the twentieth century led to the possibility of the operations heart transplants, lung, liver, pancreas, complex "heart-lung". Technically, the performance of such operations in our country is possible, but these are not carried out the transplant in connection with the critical state of the problem of organ donation.

The problem of organ donation in our country, primarily related to the fact that in our country there is no legal framework through which to conduct propaganda and advertising work among the population.

**History of the transplant service in Uzbekistan**
On the basis of the Law on Transplantation of Organs and Tissues of Human Origin of the USSR from 1971, the first operation in the Republic of Uzbekistan from cadaver kidney transplant performed in 1972 on the basis of the first Republican Hospital № 1. In the same until 1991, our country has carried out a transplant operation kidney from a cadaver and living related donor.

The number of transactions from cadaveric donors - 311, and from living related donors - 42.

Then in 2010 at the Republican Specialized Surgery Center named after academician V. Vahidova, created with the Department of Kidney Transplantation Laboratory hemodialysis, where so far produced 58 kidney transplants from living related donors 1 and 2 degrees of kinship.

In Uzbekistan, many patients in need of organ and tissue transplants. The number of patients waiting for a kidney transplant is over 2,000 (including more than 300 - children) in need of a liver transplant - 500, requiring the closure of skull defects - and more than 5,000 cornea transplants - about 2000.

**The average data for the Country**
- The fact of the operations in 2015 in the country - 28
- Abroad - 56
- The number of patients on hemodialysis - 1053
- Number requiring hemodialysis - 835
- Number of patients in need of a kidney transplant> 350
- The number of hemodialysis centers - 10
- Number of doctors/transplantologist - 3
Formation of Kidney Transplantation

Three-immunosuppression protocol:
- 1998-2006: Sandimun Neoral (cyclosporine), Cell-sept (MMF), prednisolone

Modern protocols of immunosuppression:
2010 - Present Quadruple immunosuppression:
1. Monoclonal antibody (Simulect)
2. Tacrolimus (Prograf)
3. MMF (Cell-sept)
4. Corticosteroids (prednisone)

Scientific-methodical work
- Since 2010, in RSCS named after academician V. Vahidova actively conducted experimental jobs on matters Transplantation liver
- Published articles and abstracts abroad: 11 protected

Actual problems in the country
- Adoption of the law or any regulation on transplantation of organs, tissues and (or) human cells
- Drug coverage post-transplant patients in the country

Stationary software
- Immunosuppress 100% of patients
- Anesthesia 100% state
- Operation 100% free
- Postoperative immunosuppression including 70% free, 30% - the patient 100% state security

Outpatient software
- 100% state security

O3
REGIONAL DEVELOPMENT OF LIVING DONOR KIDNEY TRANSPLANTATION IN KAZAKHSTAN: RESULTS AND PROSPECTS

Bazylbek Zhakiyev,1 Marlen Doskali,2 Gani Kuttymuratov,1 Eraln Sultangereev,1 Zhanadil Almuzrzauly,1 Zhasylkyn Doskaliyev2
1West Kazakhstan State Medical University named by Marat Ospanov, Aktobe City; 2National Scientific Medical Research Center, Astana; and 3National Oncology and Transplantation Center, Astana, Kazakhstan

Introduction: Kidney transplantation is currently the most effective treatment for end-stage renal failure. Moreover, the cost per patient had undergone kidney transplantation, much lower than the cost of treating a patient undergoing hemodialysis and peritoneal dialysis. Nowadays in the West part of Kazakhstan more than 400 patients with chronic renal failure (CRF) on hemodialysis.

Materials and Methods: From November 2014, three living donor kidney transplantation (LDKT) successfully performed in regional hospital of Aktobe city. In all cases donors were the relatives of the recipient, which confirmed by HLA typing and were compatible by cross-match results. Operations carried out in conjunction with colleagues from National Medical Centers of the capital city. Indication for renal transplantation in all patients was terminal chronic renal failure. Survey of potential donors and recipients was conducted in accordance with international protocols. Left nephroureterectomy in two cases by laparoscopic surgery and 1 - open surgery were performed. Age of donors ranged from 24 to 55 years and average was 38.2 ± 6.3 years, and the age of the recipient - from 24 to 34 years. After the donor operation the graft was transferred to a separate table, where perfusion was done by HTK, or Custodiol solution with heparin. In all cases, the operation was carried out by standard methods, kidney artery and vein connected to external iliac vessels by ‘end-to-side’ anastomosis. All grafts began to secrete urine immediately after the reperfusion. According to the protocol, all patients received standard triple immunosuppressive therapy (tacrolimus, MMF, steroids) fully under the control of tacrolimus, prevention of viral and bacterial infections, gastroprotective drugs, antihypertensive therapy.

Results: No postoperative complications were found in donors and recipients after operation, except of hematoma in the retroperitoneal space of one recipient, which did not require any surgical revision of the wound.

Conclusions: LDKT is highly oriented surgical procedure which solves the shortage of donor organs, and undoubtedly more effective treatment for patients with chronic renal failure. The first attempts showed a difficult work with good possibilities of success for transplantation program, particularly in respect to regional areas.

O4
LIVING DONOR KIDNEY TRANSPLANTATION PROGRAM IN KAZAKHSTAN: SINGLE-CENTER EXPERIENCE

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Introduction: Our objective was to analyze the outcome of living donor kidney transplantation (LDKT) performance of National Scientific Medical Research Center (NSMRC)
under the National transplant program in the Republic of Kazakhstan.

Materials and Methods: LDKT were performed after complete evaluation of donor and recipient following our practical guidelines. Histidine-tryptophan-ketoglutarate (HTK), or Custodiol solution used with heparin for graft perfusion after nephrectomy. End-to-side anastomoses to connect the artery and vein to external iliac vessels commonly were performed in all cases. Ureter of donor anastomosed to recipient bladder with an antireflux technique. Standard three component immunosuppressive therapy (CNI + MMF + Steroid) used in all patients with introduction of Basiliximab (first and fourth postoperative day).

Results: Thirty operations were performed from January 2013 to January 2015 in our center. Donor characteristics are shown in Table 1. Donor ages were between 19 and 57 years. In two cases removed right kidney from the donor, in 28 – left. In 25 donors we used open nephroureterectomy, 5 – hand-assisted laparoscopic nephroureterectomy nephroureterectomy. There were no complications in kidney donors. Complications in recipients were 2 primary graft non-function, 1 postoperative bleeding, 1 lymphorrage, 1 lymphocele, 1 urinary anastomosis leakage. Three recipients succumbed after infection complications in late postoperative period.

Conclusions: Kidney transplantation survival rate at our Medical Center has no difference from the rates achieved in other countries worldwide. The transplant program needs to be updated, particularly with respect to donor selection, recipient postoperative care.

<table>
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<th>Discharge, days after operation</th>
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<tr>
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ORGANIZATION OF ORGAN TRAFFICKING IN TURKEY

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The first organ transplantations in Turkey were heart, kidney and liver in 1968, 1975 and 1988, respectively, all in Ankara. The cardiac transplantation was performed by Dr. Kemal Beyazıt while kidney and liver transplantations were performed by Dr. Mehmet Haberal, also in Ankara. The first kidney transplantation from a cadaveric source was also realized by Professor Haberal.

A law coded 2238 and titled "Harvesting, Storage, Grafting and Transplantation of Organs and Tissues" was accepted in 1979 with zealous efforts of Professor Haberal. In 1994 “Organ Transplantation Associations Coordination Society” was established. This organization maintained relations between transplantation centers, provoked cooperation and consequently "National Organ and Tissue Transplantation Coordination System” (NCS) was established by the Ministry of Health. The system aimed to promote transplantation activities, in particular cadaveric organ procurement with a scientifically and ethically sound basis. Turkey’s 81 provinces are grouped into nine regions with one city functioning as the regional coordination center (RCC) and all regions are connected to NCS.

The basic functions of the NCS include making the regular and urgent national waiting lists, coordination of RCC, computerizing all data about donor and recipients, matching and supplying all means of rapid transportation of retrieved organs. The RCC is responsible for tissue typing and all medical, administrative and legal activities related to donor and recipients. All government and private hospitals are classified as “organ source hospitals” or "transplantation performing hospitals," naturally some hospitals are both.

Source hospitals are defined as those hospitals equipped with sufficient infrastructure and personnel capable of diagnosing “brain death.” There are 62 kidney, 35 liver, 9 heart and 6 lung transplant centers. Each patient can be on the waiting list of only one hospital.

In February of 2010 “Turkish Organ and Tissue Transplantation Data System” was initiated. This new system included information about living donors and also information about all the organs transplanted.

Further progress included establishment of “Turkish Organ Donation Data System,” which included information of individuals who have decided to donate their organs during their life time. This information is kept as top secret and SMS is sent to family members for discussion and avoid any possible complications. There is not a law about organ donation in Turkey and donation is based on improved volunteering.
As of June 2014 there were 28,287 patients waiting for seven different organs, kidney being the first by far (76.05%) followed by cornea (13.66%) and liver (7.54%) in Turkey.

There are about 7000 intensive care unit beds with ventilators in the country. The intense medical and general public education has increased organ donation to 4.6 per one million populations, which is still far from being satisfactory.

The Ministry of Health has 2832 regular ambulances, three fully equipped air planes and 17 ambulance helicopters to transport organs in a timely manner. Once an organ is available the priority followed for patients on the waiting lists is: regional urgent, regional regular, national urgent and regular national.

O6 MANAGEMENT OF PEDIATRIC ACUTE LIVER FAILURE IN THE LAST 15 YEARS: BASKENT UNIVERSITY EXPERIENCE

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Introduction: Acute liver failure (ALF) is an uncommon condition in which the rapid deterioration of liver function results in coagulopathy and alteration in the mental status of a previously healthy person. Encephalopathy may be absent, late, or unrecognized in children

Materials and Methods: We investigated ALF cases admitted to Başkent University Medical Faculty between January 2000 and February 2015. The demographic features, etiology, stage of hepatic encephalopathy, laboratory values and MELD/PELD scores at the application were recorded. Patients were divided into two groups of spontaneous recovery and liver transplantation/death in order to investigate the prognostic risk factors.

Results: There were a total of 85 patients, who were between 11 day-17 years of age, with a mean of 5.99 years ± 4.24 years, with a male/female ratio of 1.07 (44/41). Infectious causes were the most common etiology (31 patients, 36.5%), followed by indetermined causes (27 patients, 31.8%) and toxic hepatitis (12 patients, 14.1%). Hepatitis A was the most frequent infectious etiology (23 patients, 74%). Hepatic encephalopathy was absent in 16 (18.8%) patients, while 46 patients (54.1%) had stage 1 or 2 hepatic encephalopathy and 23 patients (27.1%) had stage 3 or 4 hepatic encephalopathy. PELD values were between 6.8-54.5 (mean: 28.69 ± 11.63). Thirty one percent (5/16) of patients without hepatic encephalopathy, 56.5% (26/46) of patients with stage 1-2 encephalopathy and 78.2% (18/23) of patients with stage 3-4 encephalopathy were either had liver transplantation or died P = .01.

Thirty six patients (42.4%) survived with spontaneous recovery and 49 patients either had a LT (29/85, 34%) or died (20/85 23.6%). Spontaneously recovered group had significantly lower age. INR, total bilirubin levels, higher ALT values and lower PELD values. A total of 29 patients were transplanted. Mean follow-up duration was 3515 ± 359 days (range 434 – 4610) Cumulative survival rate of the LT patients at 1, 5, and 10 years were 78.5%, 71% and 71% respectively.

Conclusions: Infectious, indeterminate, toxic and metabolic causes were most common etiologies in childhood ALF.
Clinical encephalopathy may not be present in children. Liver transplantation is a life saving procedure in acute liver failure.

O7 THE ROLE OF COLLABORATIVE WORK IN DEVELOPMENT OF LIVING DONOR LIVER TRANSPLANTATION PROGRAM IN NATIONAL SCIENTIFIC MEDICAL RESEARCH CENTER

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Introduction: Living donor liver transplantation (LDLT) has become a standard and effective treatment method and has being increasingly performed for patients with end stage liver disease. In our study we present the collaborative work experience of LDLT program development under the support of colleagues from experienced centers in National Scientific Medical Research Center during two years.

Materials and Methods: From January 2013 to February 2015, 18 LDLTs were performed in our center. Operation procedures were performed by standard methods in donor and recipients. Seventeen out of 18 right hepatectomies, 1 out of 18 left hepatectomies were performed.

Results: At a median follow up of 2 years, both the patient and graft survival were 84%. The main causes of transplantation were primary biliary cirrhosis (50%), viral hepatitis (30%) and other liver diseases. The median age of the recipients at the time of LDLT was 43.9±17.2 (19-65 years). Recipients average hospital stay was 30±5 days (23-38 days, median 30 days) found. Vascular and biliary complications were the leading cause of reoperation, graft
O8 EARLY POSTOPERATIVE INFECTIONS IN LIVER TRANSPLANTATION

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Introduction: Infectious complications during early postoperative period of liver transplantation are frequently direct complication of the surgical procedure. Besides nosocomial pathogens can also cause early postoperative infections like pneumonia, urinary system infection, catheter related bacteremia and sepsis in recipients. Aim of this study is to evaluate our early postoperative infections following liver transplantation.

Materials and Methods: We retrospectively investigated all 482 liver transplantation (LT) procedures that were performed in 472 patients between November 1988 and March 2015 in our center. We searched for infection during the first hospital stay (mean hospital stay from LT to discharge was 14 days) of all LTxS. We classified the infections into groups as nosocomial infection (NCI) and surgical site infection (SSI). We also grouped SSI as deep infection (DI, related to transplanted organ site) and superficial infection (SI, related to skin and fascia of surgical site).

Results: We detected infections in 115 patients (52 adults, 53 pediatric) in all 482 procedures (23.8%). 49 patients had NCI, 60 patients had SSI, 6 patients had both NCI+SSI. We stratified the consequences and treatment protocols of infectious complications according to Clavien scale (table1). All of 5 patients with SSI were treated with medical wound care. We diagnosed 16 bacteremia, 15 pneumonia, 9 urinary tract infections and 4 other infections. We followed eleven septic LT patients and we lost two of them.

Conclusions: Opportunistic infections are not common in early post LT period. Early post LT infections are similar with other surgical procedures. All active infections should be treated before transplantation. Besides antimicrobial therapy and correction of technical and anatomical problems are key solutions for early postoperative infections following LT.

Table 1. Infections Staged According To Clavien Scale

<table>
<thead>
<tr>
<th>Type of Infection</th>
<th>n</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3a</th>
<th>Grade 3b</th>
<th>Grade 4a</th>
<th>Grade 4b</th>
<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCI</td>
<td>49</td>
<td>30</td>
<td>8</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>0</td>
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<tr>
<td>SSI</td>
<td>60</td>
<td>33</td>
<td>0</td>
<td>20</td>
<td>6</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>NCI+SSI</td>
<td>6</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

O9 EARLY INFECTIONS IN RENAL TRANSPLANT RECIPIENTS: THE INCIDENCE, RISK FACTORS, AND CAUSATIVE MICROORGANISMS

Hakan Yabanoglu,1 Hikmet Eda Aliskan,2 Kenan Caliskan,1 Ilker Arer,1 Aydincan Akdur,1 Sedat Yildirim,1 Gokhan Moray,1 Mehmet Haberal1
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Introduction: Renal transplantation (RT) represents the best treatment for end-stage renal failure patients. Infections are one of the commonest complications following RT. In particular, immunosuppressive therapy makes patients more prone to infections. The most common infections after RT are the urinary tract infections (UTI) (%45-72). Apart from UTIs, sepsis, pneumonia, and surgical field infections are also common. Posttransplant infections create significant morbidity and mortality for affected patients. This study aimed to compare risk factors for infections between RT recipients with and without infection within the following year of renal transplantation.

Materials and Methods: The results of 411 patients who underwent RT from 2010 to January 2014 at Baskent University Ankara and Adana Research and Training Centers were retrospectively analyzed. The patients were categorized into two groups. The two groups were compared with each other with respect to general clinical and demographic variables and the number and frequency of infectious attacks within a 1- year follow-up period, infection type.

Results: Two hundred and seventy three (66.4%) of the subjects were male and 138(33.6%) were female. The mean age of the RT recipients was 30 years, with the youngest being 2 years old and the oldest 76. Three hundred and twenty one (73.5%) of the subjects were in adult age group (>18 years old) and 90(26.4%) were in the pediatric age group (<18 years old). Of total 411, 276 (67.1%) subjects did not developed any infection within the 1-year period after the operation (Group 1) while 57 (32.9%) developed an infection (Group...
Urinary tract infections (UTI) were the most common infections (42.1%). Escherichia coli (E.coli) was the most common culprit organism with a rate of 22.7%, followed by Klebsiella pneumoniae (K.pneumoniae) (9.2%), Candida and coagulase-negative staphylococcus species (7.7%), and Acinetobacter baumannii species (5.8%).

Conclusions: Transplantation is a demanding and important surgical procedure. Postoperative care and follow-up, as well as detection and management of potential problems following surgery are of utmost significance. The management of infections, which are among the most important complications, may reduce patient mortality and morbidity, and costs as well.

O10
LATE ICU ADMISSION IN LIVER TRANSPLANT RECIPIENTS: TEN YEARS EXPERIENCE

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Introduction: Respiratory complications after liver transplantation have been reported to range from 64% to 88%. Liver transplant recipients requiring ICU admission for acute respiratory failure (ARF) is associated with high mortality and morbidity rates (1). The aim of this study was to evaluate late ICU admission in liver transplant recipients to identify incidences and causes of ARF in the postoperative period and compare those without ARF.

Materials and Methods: We retrospectively screened the data of 173 consecutive adult liver transplant recipients who received their grafts at Başkent University Transplant Center from January 2005 through March 2015. Among them patients admitted to ICU were included for the analysis. ARF was defined as severe dyspnea, respiratory distress, decreased oxygen saturation (<92%), hypoxemia (PaO2<60mmHg) or hypercapnia (PaCO2>60mmHg) on room air or requirement of noninvasive or invasive mechanical ventilation. Demographic, clinical and laboratory data were collected. Model for End-stage Liver Disease (MELD), Acute Physiology and Chronic Health Evaluation II (APACHE II) and Sequential Organ Failure Assessment (SOFA) scores at ICU admission and lengths of ICU, hospital stay and mortality were assessed.

Results: Among the 173 adult liver transplant recipients, 37 (21%) were admitted to ICU, including 22 (60%) with ARF. Mean MELD, APACHE II and SOFA scores of patients with ARF at ICU admission were 22 ± 10, 28 ± 7 and 12 ± 5, respectively. Mean patient age was 47 ± 13 years with 84% males and median time from transplantation to ICU admission was 122 days (0 to 1694). The leading cause of ARF was pneumonia (n=19, 86%) followed by pulmonary thromboembolism (n=2, 10%) and cardiogenic pulmonary edema (n=1, 5%). Patients with ARF had significantly lower levels of albumin (2.9 ± 0 g/dL vs 3.4 ± 1 g/dL) when compared to those without ARF (p=0.03). Severe sepsis (n=20, 91% vs n=5, 33%, p=0.001) and septic shock (n=18, 82% vs n=4, 27%, p=0.002) were more frequently observed in ARF patients than patients without ARF. Compared to patients without ARF, tracheotomy was more frequently performed in patients with ARF (59% vs 20%, p=0.018). The length of ICU stay was significantly longer (22.9 ± 22.8 days vs 5.8 ± 3.2 days) and ICU mortality was significantly higher (59% vs 7%) in patients with ARF (p=0.002, p=0.001, respectively).

Conclusions: Acute respiratory failure was detected in 60% of liver transplant recipients with late ICU admission. The leading cause of ARF was pneumonia and patients with ARF had higher requirements of invasive mechanical ventilation and tracheotomy. The length of ICU stay was longer and mortality was higher in patients with ARF compared to those without ARF.

Reference:

O11
EXPERIENCE INTRAPULMONALNOY PERCUSSIVE VENTILATION IN BILATERAL MYCOPLASMA PNEUMONIA AND PULMONARY EDEMA IN CHRONIC REJECTION OF A KIDNEY TRANSPLANT

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Introduction: According to the Congress of the European Respiratory Society (ERS 2013) and G.Riffard iM.Toussaint (2012) intrapulmonalnaya percussion lung ventilation (IPV), [3,4] point out that IPV allows patient to breathe on their own with the help of “fan percussion programming” providing auxiliary stage to inflate the lungs, followed by percussion lung deflation to a predetermined expiratory baseline, thereby providing: endobronchial percussive mixing; blow-up step by step - an increase in lung volume; automatic stabilizer (level) CPAP; interval at the end of inspiration promotes passive expiratory removal of secretory masses.
In this context, the aim of this study was to determine the role of percussion intrapulmonalny lung ventilation strategy to protect the lungs during the respiratory benefits in a patient with interstitial pneumonia, cytomegalovirus (CMV) and pulmonary edema with chronic kidney graft rejection.

**Materials and Methods:** The analysis of integrated respiratory and intensive therapy during the treatment of the patient IR 33 years, with a diagnosis of Bilateral interstitial pneumonia (TORCH: CMV, mycoplasma). Interstitial edema. Condition after related transplantation of the right kidney (December 2013, India). Chronic graft rejection (biopsy in May 2014, India).

**Results:** An analysis of the clinical situation with bilateral interstitial edema CMV pneumonia against the backdrop of the global impairment of the immune status of the patient and the progression of the syndrome of intoxication in the state of forced inactivity, with worsening of the respiratory status of the patient in the standard approach was predictable treatment of tracheal intubation and transfer to traditional prolonged mechanical ventilation lung with potential adverse outcomes.

Given data G. Canaud [1] that in chronic graft rejection participate both humoral and cellular immune responses, and the development of pathogenic mechanisms based on immuno response induced by immune complexes, with the progression of degenerative processes that damage the vascular endothelium and epithelial lining of the respiratory tract.

Tactics and respiratory intensive care unit was integrated application 4-component treatment regimen:

1. NiCPAP- (Noninvasive Constant Positive Airway Pressure);
2. IVP. apparatus IPV-HC BI-PHASIC IMPULSATOR (Percussionaire);
3. Mask PEEP (positive end-expiratory pressure);
   hemodialysis - were the main pathogenetic method of in vitro treatment of chronic kidney graft rejection.

As a result of the treatment and the use of quadruple scheme respiratory and critical care patient with bilateral CMV-pneumonia and interstitial edema with chronic kidney graft rejection positive dynamics with the normalization of respiratory status within 14 days.

**Conclusions:** The studies revealed the ineffectiveness of the standard scheme of respiratory therapy, without intrapulmonalny percussion ventilation, with interstitial pneumonia with pulmonary edema with chronic kidney graft rejection.

The use of 4-component scheme as part of IVP, NiCPAP, mask PEEP and software hemodialysis is optimal respiratory complex tactics in patients with bilateral CMV-pneumonia and interstitial edema with chronic kidney graft rejection.

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**O12**

**PEDIATRIC HEART TRANSPLANTATION – BAŞKENT UNIVERSITY EXPERIENCE**

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**Introduction:** Heart transplantation has been the treatment of choice for end stage heart failure in children since was first done in 1967. Approximately one out of ten transplantations is done for pediatric patients. According to ISHLT, annual number of pediatric heart transplantations is about 550. Annual number of heart transplantations for all ages is 60 to 70 in Turkey for the last 8 years.

**Materials and Methods:** The annual number of heart transplantations in Başkent University is around 10, of which half are done for pediatric patients below 17 years. A total of 36 pediatric transplantations were done. The age distribution of the recipients is in favor of patients over 10 years (70%).

**Results:** Twenty-nine patients had cardiomyopathy, dilated, restrictive or hypertrophic. Six patients had congenital heart defects. Five of them had undergone at least one cardiac surgery. Twenty-nine of patients were discharged. Twenty-one of them are still alive and under follow-up.

**Conclusions:** Cardiac transplantation is and will be the best remedy for children with end stage heart failure with satisfactory early and late posttransplant results.

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**O13**

**EARLY REPORTS OF LUNG TRANSPLANTATION FROM YEDIKULE ORGAN TRANSPLANT CENTER: A 3 YEAR EXPERIENCE**

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**Introduction:** Lung transplantation is the gold standard method for treatment of end stage lung disease with various etiology. We aimed to present first results of lung transplantation in our transplant center.

**Materials and Methods:** We retrospectively analyzed 31 lung transplantation of 29 patients in Yedikule Thoracic Surgery and Chest Diseases Hospital between March 2012 and February 2015 (21 bilateral, 8 single, 2 retransplantation).
Surgical mortality was accepted as mortalities occurring in postoperative 90 days or mortalities before discharge.

**Results:** There were 17 male, 12 female patients with a median age of 41.4±11.7 years. Indications were as bronchiectasis in patients, emphysema in 8 patients, interstitial lung disease in 6 patients, sarcoidosis in 2 patients, posttransplant bronchial stenosis in 2 patients and other lung disease in the 6 patients. The median waiting time in organ transplant list was 6.3±4.8 months. Perioperative ECMO was used in 14 patients (45.1%). The ischemia time was 342±79 minutes for single lung transplant and 535±85.9 minutes for bilateral lung transplantation. There was no perioperative mortality. Surgical mortality rate was 25.8% (n=8). The only factor affecting the surgical mortality was perioperative ECMO requirement (p=0.01). The ischemic time for both bilateral and single lung transplantation was longer in patients with surgical mortality but this was not statistically significant (respectively, p=0.318 and p=0.931). The follow up period of 18 patients is 12.4 months (62%). One year overall survival rate is 58.7±9.7%, whereas survival rate after exclusion of surgical mortalities is 77.8±9.8%.

**Conclusions:** Lung transplantation offers significant survival rates in selected patients. Our first results are compatible with early results presented in the literature.

**O14**

**ACUTE RESPIRATORY FAILURE IN CARDIAC TRANSPLANT RECIPIENTS**

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**Introduction:** Cardiac transplantation is the curative therapy for end-stage heart failure. Organ dysfunctions may occur during late posttransplant period necessitating readmission to intensive care unit (ICU) in survivors of cardiac transplant recipients. Acute respiratory failure (ARF) is one of the major morbidity seen in this group of patients leading to ICU readmissions, prolonged hospitalization, and affecting patient outcomes. Aim of this study was to evaluate the incidence, risk factors, and outcomes of ARF in cardiac transplant recipients

**Materials and Methods:** All consecutive cardiac transplant recipients who were >15 years of age and readmitted to ICU after cardiac transplantation between 2005 and 2015 were included in this retrospective study. Collected data included demographics (age, sex, body weight, length), etiology of chronic heart failure, comorbidities, Euroscore and sequential organ failure assessment (SOFA) scores, cause of acute respiratory failure, laboratory values and blood gas values on readmission, presence of infections and acute renal failure, need for renal replacement therapies, ventilator settings, partial pressure of arterial oxygen to fractional inspired oxygen ratio (P/F), length of hospitalization and mechanical ventilation, and mortality.

**Results:** Out of 91 cardiac transplant patients, 39 (42.9%) patients who met inclusion criteria were included in the final analyses. The most frequent causes of readmission were routine ICU follow up after endomyocardial biopsy (48.7%), heart failure (25.6%), sepsis (12.5%), and pneumonia (12.5%). Patients who were readmitted to ICU were further divided into two groups regarding presence of ARF. Patients with ARF (n=17) and without ARF (n=22) were compared. Patients’ age and body weight did not differ between groups (45.1±12.7 years vs 37.3±16.2 years; p=0.109 and 67.7±14.5 kg vs 68.6±15.1 kg; p=0.910, respectively). The groups were not different in terms of presence of comorbidities (p>0.05). The admission SOFA scores were higher in patients with ARF (8.3±1.7 vs 7.1±0.9; p=0.018). Patients with ARF were more likely to use bronchodilators and n-acetylcysteine prior to readmission (76.5% vs 27.3%; p=0.004 and 76.5% vs 31.8%; p=0.010, respectively). Mean peak inspiratory pressures were higher in patients in ARF (12.0±1.7 vs 11.0±1.2, p=0.035). Patients with ARF developed sepsis more frequently (64.7% vs 4.5%, p<0.001) and they were more likely to have hypotension (70.6% vs 18.2%, p=0.003). Patients with ARF had higher values of serum creatinine prior to admission to ICU and in the first day of ICU (1.7±1.7 mg/dl vs 1.0±0.2 mg/dL, p=0.019 and 2.1±1.6 mg/dl vs 1.3±0.7 mg/dL, p=0.024, respectively). Patients with ARF had more frequently bilateral opacities on chest x ray (64.7% vs 9.1, p<0.001) and positive blood and urine cultures (70.6% vs 18.2%, p=0.003 and 64.7% vs 22.7%, p=0.011, respectively). Duration of ICU and hospital stay were not statistically different between groups (p>0.05). Mortality in patients with ARF was 76.5% compared with 0% in patients without ARF (p<0.001).

**Conclusions:** We concluded that a significant number of cardiac transplant recipients were readmitted to ICU. Patients presenting with ARF on readmission more frequently developed sepsis and hypotension suggesting a poorer prognosis. In addition ARF on readmission was found to be associated with mortality in cardiac transplant recipients.
O15
INCIDENCE AND OUTCOMES OF ACUTE KIDNEY INJURY FOLLOWING ORTHOTOPIC CARDIAC TRANSPLANTATION: A POPULATION-BASED COHORT STUDY
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Introduction: Acute kidney injury is an important and frequent complication following cardiac transplantation. We aimed to describe the risk factors of acute kidney injury according to KDIGO criteria following cardiac transplantation.

Materials and Methods: A retrospective population-based cohort study of recipients of cardiac transplantation at Baskent University between February 2003 and January 2015 older than 12 was performed. 64 of 94 patients were evaluated. The main outcome was acute kidney injury, defined and classified according to the Kidney Disease: Improving Global Outcomes (KDIGO) criteria, in the first 7 post-operative days. The other outcomes included risk factors, utilization of renal replacement therapy, occurrence of post-operative complications, mortality and kidney recovery. The mean age at transplantation was 34.14±16.30 years and 70.32% of the patients were male.

Results: Of the 64 cardiac transplantation recipients included, acute kidney injury occurred in 34 (53.12%), with severity classified as Stage I in 15.62% (n = 10), Stage II in 21.87% (n = 14) and Stage III in 15.62% (n = 10). Renal replacement therapy was received by 25 patients (39.06%). Patients who had acute kidney injury were significantly older (40.41±15.85 vs 27.03± 13.91 years, p=0.001), had higher body surface area (1.78±0.28 vs 1.61±0.31, p=0.033) and more frequently had history of hypertension (p=0.011) and smoking (p=0.007) when compared with those who did not have acute kidney injury. When compared with patients who did not develop acute kidney injury postoperatively, intraoperative lower urine output (632.33±430.94 vs 453.380±266.85 ml, p=0.01) were seen in those who developed acute kidney injury.

Conclusions: Our results suggest that based on KDIGO criteria, postoperatively acute kidney injury more likely occur in patients with hypertension. Older age, bigger body surface area and lesser urine output in the operation are associated with acute kidney injury following heart transplantation.

O16
RESULTS OF COMBINED PENETRATING KERATOPLASTY AND IMPLANTATION OF SCLERAL-SUTURED POSTERIOR CHAMBER INTRAOCULAR LENSES
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Introduction: Our objective was to evaluate the clinical outcome in 14 patients (14 eyes) who underwent penetrating keratoplasty and scleral-fixation of an intraocular lens (IOL).

Materials and Methods: Charts of the patients who underwent combined penetrating keratoplasty and implantation of scleral-sutured posterior chamber intraocular lenses between January 2010 and January 2015 were reviewed. Gender and age of the patients, indication for surgery, pre- and post-operative best corrected visual acuity, diopter of implanted IOL, postoperative refraction, duration of follow-up and complications were recorded.

Results: The mean age of the patients was 71.2±15.0 years and the female/male ratio was 11/3. The indications for penetrating keratoplasty with scleral-fixation of an intraocular lens were pseudophakic corneal edema in 6 patients (43%), aphakic corneal edema in 2 patients (14%), trauma in 3 patients (21%), and corneal scars in 3 patients (21%). Patients with pseudophakic corneal edema underwent IOL exchange and penetrating keratoplasty. Patients with lens subluxation underwent cataract extraction and penetrating keratoplasty in the same operation session. Preoperative visual acuity was p+p+ in 2 eyes (14%), hand motion in 5 eyes (36%), finger counting in 4 eyes (28%) and 20/400 in 3 eyes (21%). The mean duration of follow-up was 14.8±8.5 months. Postoperative spectacle-corrected visual acuity of 20/200 or better was observed in 8 eyes (57%). The postoperative mean spherical equivalent was 2.53±6.00 D and the mean cylinder was 3.78±1.66 D. At the end of follow-up, 10 corneal grafts remained clear. Graft failure was observed in 3 eyes (21%) and recurrence of herpetic stromal keratitis was observed in 1 eye (7%). Glaucoma was observed in 9 eyes (64%) and graft failure occurred as a result, in 3 of these.

Conclusions: Trans-scleral fixation of intraocular lenses combined with penetrating keratoplasty is associated with favorable visual outcomes in eyes with keratopathy and lacking posterior capsular support. However, glaucoma is an important and common complication frequently leading to graft failure.
Introduction: Corneal transplantation (keratoplasty) refers to the category of complicated operations, the success of which is associated with many interdependent factors: the somatic condition of the patient, the quality of the donor material, features of the technique employed, etc. The main criterion for effectiveness of this operation is transparent engraftment of the cornea, the absence of graft rejection and improvement of visual functions. The purpose of this study is to investigate the possibility and the effectiveness of the corneal transplantation to patients with keratoconus.

Materials and Methods: The study included 18 patients with stage III-IV keratoconus, to whom corneal transplantation (penetrating keratoplasty) was done with the femtosecond system VisuMax of “Carl Zeiss Meditec” company using adopted disposable packages for the recipient and the donor. Fixation of formed surfaces was carried out by putting continuous suture around the entire circumference. 6 men and 12 women were involved in the study. Their average age was 42 years. Complete ophthalmologic examination including slitlamp biomicroscopy, refraction, corneotopography, fundoscopy, tonometry, pachymetry showed the absence of contraindications for the correction. The condition of the cornea on cellular level was assessed by Heidelberg Tomographer HRT III. Observation period was 12 months.

Results: Corneal pachymetry measurement of the recipient in the maximal thinning zone was 409±7 µm in average, postoperative corneal pachymetry measurement of donor cornea was 544±5.5 µm in central optical zone allowing to restore physiological corneal thickness in the area of transplantation. Preoperative and postoperative parameters are presented in Table 1. During optical coherence tomography Visante OCT 3 weeks after surgery we observed «edge to edge» adapting of donor disc at the edges of formed bed. In scar formation zone on a profile scan one can observe some tissue thickening nonetheless coarse scarring and marked hyperplasia was not observed. A smooth transition from the donor cornea to the recipient’s own layers, uniform adaptation of formed surfaces and the absence of rough hyperplasia in the scar area contributed to the reduction of induced ametropia, whereby visual acuity remained relatively high and stable during whole observation period. Transplant rejection reaction developed at two patients 3 and 6 months after surgery, which was successfully jugulated by standard corticosteroid therapy. All patients had clear corneal transplant engraftment throughout the observation period.

Table. Keratorefractive Indicators Before and After Surgery (M±σ, n=11)

<table>
<thead>
<tr>
<th>Parameter under study</th>
<th>Average meaning</th>
<th>Before surgery</th>
<th>1 month</th>
<th>3 month</th>
<th>6 month</th>
<th>14 month</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCVA</td>
<td>0.4±0.31</td>
<td>0.25±0.1</td>
<td>0.4±0.1</td>
<td>0.4±0.09</td>
<td>0.35±0.08</td>
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<tr>
<td>BSCVA</td>
<td>0.06±0.06</td>
<td>0.3±0.09</td>
<td>0.5±0.16</td>
<td>0.45±0.06</td>
<td>0.6±0.02</td>
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<tr>
<td>Keratometry, D</td>
<td>51.75±3.25</td>
<td>43.00±2.25</td>
<td>44.25±2.37</td>
<td>44.00±2.75</td>
<td>44.5±2.11</td>
<td></td>
</tr>
<tr>
<td>Spherical equivalent, D</td>
<td>-10.45±3.75</td>
<td>3.67±1.35</td>
<td>-2.25±2.75</td>
<td>-1.87±2.71</td>
<td>-2.5±1.75</td>
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<tr>
<td>Astigmatism, D</td>
<td>9.25±4.37</td>
<td>6.5±1.7</td>
<td>4.5±2.1</td>
<td>3.25±2.1</td>
<td>2.5±2.75</td>
<td></td>
</tr>
<tr>
<td>Mean endothelial cell density, mm²</td>
<td>2764±177</td>
<td>2624±168</td>
<td>2621±202</td>
<td>2624±158</td>
<td>2612±132</td>
<td></td>
</tr>
</tbody>
</table>

Conclusions: Corneal transplantation using femtosecond laser is an effective and safe method.

O18 BRAIN DEATH

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The concept of brain death has progressed over time since the first clinical description by Mollaret-Goulon in 1959. Brain death is basically a clinical diagnosis including the triad of irreversible coma (3 points on Glasgow Coma Scale), complete loss of spontaneous respiration and loss of all brain stem reflexes.

Although there is global consensus about this definition, the controversy exists about the number of physicians who to diagnose and the use of confirmatory tests. The confirmatory tests aim to demonstrate the cessation of intracranial blood circulation and also of neuronal activity.

The original law in Turkey pioneered by Professor Mehmet Haberal in 1979 requested four physicians for the diagnosis of brain death (neurologist, neurosurgeon, anesthesiologist and cardiologist) and compulsory confirmatory tests. The recent revisions reduced the number of physicians to two neurologist or a neurosurgeon, anesthesiologist or an intensivist). The decision to perform a confirmatory test is left to the physician thus making it optional.

The very important prerequisite of the diagnosis of brain death is radiologic evidence of a pathology leading to brain death. In a great majority of cases cerebrovascular accident and cerebral trauma are the responsible pathologies.

Another important point is ruling out of some conditions and diseases that would cause difficulty in differential diagnosis, such as hypothermia, drug intoxication and metabolic disturbances. Special attention is needed for the diagnosis of brain death in the pediatric age group.
Patients diagnosed with brain death are potential candidates for organ harvesting provided that there are no medical contraindications. For that cause especially doctors working in the Intensive Care Unit, nurses and other medical staff should fully be well trained about the diagnosis of brain death and management of such a patient for possible organ donation. Adequate cardiac function and adequate peripheral blood circulation is essential to preserve organs.

The educational efforts should also target the general public in order to promote organ donation.

Reporting of brain death cases is legal obligation in Turkey. Statistical data from the Ministry of Health has revealed that the reported number of brain death patients has increased over the years, but in contrast the percentage of the family consent for organ donation has drastically decreased as illustrated on Table 1.

The whole process of brain death diagnosis, explanation of the situation to the family members and request for organ donation is a well established protocol in Başkent University.

| Table. Statistical Data from Turkish Ministry of Health |
|-----------------|-----------|-----------|-----------------|-----------------|
| Years | Brain Death | Family Consent % | Organs Transplanted | % |
| 2005 | 229 | 75.98 | 153 (87.9) |
| 2006 | 270 | 61.11 | 143 (86.6) |
| 2007 | 594 | 41.2 | 223 (91.1) |
| 2008 | 720 | 36.38 | 242 (92.3) |
| 2009 | 944 | 31 | 261 (87.5) |
| 2010 | 1036 | 26.2 | 259 (95.2) |
| 2011 | 1291 | 26 | 310 (93.0) |
| 2012 | 1478 | 23 | 343 (99.4) |
| 2013 | 1708 | 23 | 377 (99.4) |
| 2014 | 1086 | 37.47 | 407 (100) |

O20
THE FIRST CASE OF KIDNEY TRANSPLANTATION IN KYRGYZSTAN: KYRGYZ-BELARUS PARTNERSHIP
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Introduction: There is a result of Kyrgyz-Belarus partnership in this work. The results of 1st 10 operations of kidney transplantation from alive donors to adults (7/10) and children (3/10) from the period of 2012 to 2014 years which was done on the base of National center of childhood and maternity of Kyrgyz Republic, Bishkek are here.

Materials and Methods: The period of time during which the patients was observed is from 6 month up to 2 years. The average age of donors was 9 year. The period of dialysis therapy was 26.5 months. There was 1 case when pre-dialysis transplantation of kidney was performed.

Results: The initial function of transplanted kidney was registered in 8/10 of patients. Surviving of patients and transplanted kidneys was 100%. Diuresis reached in the first day an average of 5.2 liters in adult recipients, and 6.5 liters - in children.

Conclusions: The results of 1st work of Kyrgyz and Belarus specialists was positive.

O21
RESULTS OF KIDNEY TRANSPLANTATION FROM DECEASED DONORS WITH MARGINAL CRITERIA
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Introduction: Objective of the study was to evaluate the results of renal transplantation from deceased donors with marginal characteristics.
Materials and Methods: 144 kidney transplants from deceased donors were held on the base of our center in 2014. The average age of donors was 42 ± 9 years. The head injury was the cause of brain death in 40 donors (28.3%), in 104 (71.7%) - acute ischemic stroke. The number of recipients who had received grafts from donors with 1 marginality feature was 50 (34.7%), with 2 features - 13 (9%), 3 or more features - 3 (2.1%). In recipient, who had received a graft from the “ideal” donor, the number of delayed graft function after kidney transplantation was 13 (9%) and from the marginal donor - 26 (18% of all recipients).

Results: Statistical analysis showed significant influence of cold ischemia time, donor age and donor transplant pathology in the development of delayed graft function, duration and frequency of hospital treatment of distal ureteral necrosis. (Mann-Whitney test, Spearman criteria: p < .05 ). Cold ischemia time in the control group was 601 ± 226 minutes, and in the marginal group - 782 ± 226 min, donor age in the control group - 38 ± 7.6 years vs. 44.1 ± 10.1 years in the study group. The duration of the treatment of recipients, who had received graft from marginal donors, was 21.3 ± 9.7 days vs. 13.9 ± 7.6 days in the control group. Necrosis of the distal ureter was detected in 8 recipients of marginal group in versus 3 in the control group (Fisher test, p = 0.02). At the same time, the analysis showed that statistically significant results in the studied cohort of patients, that can prove the influence of donor factors on postoperative mortality, septic and immunological complications, had not been received.

Conclusions: Thus, the results of the analysis showed that the use of marginal kidney grafts have an increased risk of postoperative complications.

O22
OUTCOMES OF PATIENTS WITH HEPATOCELLULAR CARCINOMA AFTER LIVER TRANSPLANTATION

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Introduction: Liver transplantation (LT) is one of the few effective treatment options for hepatocellular carcinoma (HCC). Our aim in this study was to evaluate the risk factors for HCC recurrence after LT.

Materials and Methods: In this retrospective study, between October 1988 and March 2015, 473 LTs were performed at our institution. 231 of them were pediatric and 242 were adult. Among these patients LT was performed in 52 patients (10.9%) for treatment of HCC. As well as HCC was detected incidentally in 6 patients (1.2%) who underwent LT for other reasons.

Results: In the pediatric group, 11 (4.8%) were undergone LT for HCC. In the adult group, LT were performed for HCC in 47 (19.4%) patients. Overall 39 (67.2%) patients were undergone LT beyond the Milan criteria in both pediatric and adult groups. HCC recurrence was detected in 14 (24.1%) patients. Overall 5-year and 10-year survival rates of patients were undergone LT beyond the Milan criteria for HCC were 50.3% and 43.1%, respectively. Overall 5-year and 10-year survival rates of patients were undergone LT within the Milan criteria for HCC were 78.4% and 72.6%, respectively. Significant better overall survival rates were noted in the within Milan criteria group (P=0.024). Disease free 5-year survival rates of patients were undergone LT beyond the Milan criteria and within the Milan criteria for HCC were 56.8% and 78.7%, respectively (P=0.024). The main predictive variable was whether the tumor had expensed beyond the Milan criteria.

Conclusions: As expected, outcomes were significantly better in the within the Milan criteria group. Even though, the overall and disease free survival rates were promising in such a group of patients who had no better chance. It could be asserted that liver transplant is one of the safe and effective treatment options with promising results; even if the tumor expanse is beyond the Milan criteria.

O23
PATHOLOGIC CRITERIA TO ESTIMATE THE STATE OF THE LIVER IN POTENTIAL DONORS

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Introduction: A successful liver transplant is a life-saving treatment for people with liver failure, a condition in which the liver no longer works as it should. People with either acute or chronic liver failure may need a liver transplant to survive. Acute liver failure (ALF) happens suddenly. Drug-induced liver injury (DILI) is the leading cause of ALF. Chronic liver failure, also called end-stage liver disease, progresses over months, years, or decades. Most often, chronic liver failure is the result of cirrhosis, a condition in which scar tissue replaces healthy liver tissue until the liver cannot function adequately. The most common reason for needing a liver transplant is cirrhosis caused by chronic hepatitis C, followed by cirrhosis caused by long-term alcohol abuse. Many other liver diseases also cause cirrhosis, including other forms of chronic hepatitis, including chronic hepatitis B and autoimmune hepatitisdiseases, primary biliary cirrhosis, and primary
sclerosing cholangitis, hemochromatosis, Wilson disease, nonalcoholic steatohepatitis. Other reasons for liver transplantation include cancers originating in the liver such as hepatocellular carcinoma, hepatoblastoma, and cholangiocarcinoma. A small number of transplants come from deceased donors. Most transplants involve living donors, who donate part of their liver, usually to a family member. Complications after liver transplant surgery may include bleeding, bile leaks, blood clots in the liver's blood vessels, infection, rejection of the new liver, and side effects from immunosuppressive medications. Liver transplant recipients must take immunosuppressive medications for the rest of their life. Most liver transplants are successful. People who have a liver transplant are usually able to return to normal activities after recovering for several months. The aim of the investigation: is to develop pathologic criteria to estimate the condition of the liver in potential donors.

Materials and Methods: There has been carried out the histological study of 17 liver biopsy material of potential donors. Liver tissue sections were stained by hematoxylin and eosin, using Massons Trichrome staining, and PAS stain. To analyze histological material there have been used the computer quantitative morphometry system and statistical techniques.

Results: The protocol of morphological estimation of the liver of potential donor was developed. According to the protocol, donors liver pathology is to be estimated by histological criteria (steatosis, proteinosis and necrosis of hepatocytes, enotheliitis of central veins, endarteritis, phlebitis and inflammatory infiltration in portal tracts, hepatic fibrosis). To estimate the state of the liver in potential donors for transplantation, it is preferable to carry out the histological study. In order to verify the morphological state of the liver conducted a liver biopsy from potential deceased donor and living donors. The results of morphological research are taken into account to estimate the condition of the liver in potential donors. In histological research we consider clinical and laboratory observation of donor, which are reflected in the blank areas for histological research.

A comparison of clinical and laboratory observation with morphological changes in the biopsy is necessary for the proper interpretation of revealed pathology.

In 2014 there has been carried out the histological study of 11 liver biopsy material of potential donors. In 2015, 6 histological studies were performed. The protocol of morphologica estimation of the liver of potential donor was used.

According to the protocol, donors liver pathology is to be estimated by eight histological criteria steatosis (0-3 points); proteinosis ( 0-3 points); necrosis of hepatocytes (0-3 points); enotheliitis of central veins (0-3 points); hepatic fibrosis in portal tracts (0-4 points); inflammatory infiltration in portal tracts (0-3 points); endarteritis in portal tracts (0-3 points); phlebitis in portal tracts (0-3 points).

According to the results of histological examination, results are as follows: in all cases revealed mild (from 2 to 9 points, at a rate of 0-10 points) pathology of donor liver.

Conclusions: Results of the study showed that the morphological criteria to estimate the state of the liver in potential donors not only steatosis and fibrosis, there are another important histological criteria (proteinosis, necrosis of hepatocytes, enotheliitis of central veins, inflammatory infiltration in portal tracts, endarteritis in portal tracts, phlebitis in portal tracts).

O24 SURGICAL COMPLICATIONS AFTER LIVER TRANSPLANTATION

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Introduction: Postoperative surgical complications can be evaluated as early and late complications. Biliary complications are the most seen surgical complications after liver transplantation. In the literature, the incidence of biliary complications are 20-45%. Vascular complications are rare than biliary complications but they may cause early graft loss and mortality. Vascular complications occurs within the first 2-4 weeks of transplantation. Early diagnosis and treatment is important to avoid graft loss. In this study we aimed to review the incidence and management of surgical complications.

Materials and Methods: The results of 476 patients, who underwent LT from 1988 to January 2015 at our liver transplant center in Turkey were retrospectively analyzed. We performed 363 living donor LT (LDLT), 113 deceased donor LT (DDLT). First 7 days after transplantation, in all patients we performed doppler USG and blood laboratory tests twice in a day to determine surgical complications early. After transplantation heparin infusion were given all patients according to the patients aPTT level and postoperative seventh day to all patients were started 100 mg acetylsalicylic acid as antiaggregant. After transplantation, all patients were treated with the same immunosuppression protocols including calcineurin inhibitors, mycophenolate mofetil and prednisolone.

Results: Biliary reconstruction was hepaticojejunostomy (HJ) in 87(18.2%) patients and duct to duct (DD) in 389 (81.8%) patients. Biliary complications were more in LDLT (LDLT vs DDLT, 37% vs 28%), pediatric LT (pediatric vs adult, 34% vs 36%) and DD group (HJ vs DD, 15.9% vs 38%). Sixty nine BL
(80/476, 16.8%), 30 BS (41/476, 8.6%) was detected as early biliary complication. Four BL (4/476, 0.8%) was detected as late biliary complication. Fifty eight interventional radiologic techniques (IRT) were applied for early BL, six of which failed and had surgical revision. For late BS we performed 4 surgery, 28 interventional radiology, three of which ended with surgery. Fifty two IRT that we performed for early BL caused 19 late BS and each patient had at least ≥3 percutaneous dilatations or drainage catheter insertion and eventually four patients had revisional surgery for failed repeated percutaneous modalities. Forty seven of the 476 LTs (9.8%) were diagnosed with hepatic arterial thrombosis (HAT). 21 HAT (44.6%) were treated with IRT while 22 HAT (46.8%) were managed with surgical reconstruction and the rest 4 HAT (8.5%) were treated with surgical reconstruction due to failed radiologic approach.

Tree of this 4 patients had retransplantation. Twelve of the 476 LTs (2.5%) were diagnosed with portal vein stenosis and 8 (1.6%) patient were diagnosed with thrombosis. All of portal vein stenosis were treated with IRT. 5 of the portal vein thrombosis were treated with surgical reconstruction and others were treated with IRT. Nineteen hepatic vein stenosis were detected as hepatic vein complication. Three of them were treated with surgical reconstruction and 16 of them were treated with IRT.

Conclusions: Surgical complications impair patient and graft survival after liver transplantation. For early diagnosis postoperative USG follow up is efficient and decreases graft lost and mortality. IRT is an efficient alternative method for management of these patients.

O25
SURGICAL TREATMENT OF COMPLICATIONS AFTER RELATED LIVER TRANSPLANTATION IN THE CITY CLINICAL HOSPITAL NO 7 (CORRECTION OF COMPLICATIONS)

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Introduction: Our aim is to reflect the possibility of surgical treatment of complications in postoperative period after orthotopic liver transplantation in city hospital of Almaty city.

Case Report: The liver transplantation is performed on the base of hepatopancreatobiliary surgery and liver transplantation in city clinical hospital №7 Almaty city from 16 December 2014. Under a memorandum of international cooperation in liver transplantation at the initial stage of its development was carried out in conjunction with leading transplants surgeons from Apollo Hospital, New-Delhi, having vast experience in the related orthotopic liver transplantation. Up to this day, 6 related orthotopic liver transplantation and 1 cadaver liver transplantation was performed. The sixth liver transplantation in post-transplant period flowed with complicated course. Patient M., 51 years old was operated on for liver cirrhosis in the outcome of overlap defeat. PBC 3-4 stage, MELD SCORE 16 (27%). Diabetes mellitus, 2 type. IAP, severe course, subcompensation. Operation 16.11.2014 “Laparotomy by Calne, heptectomy, implantation of related donors liver, right lobe (Sg. V, VI, VII, VIII). Post operative period dynamic monitoring of arterial, portal, caval blood flow conducted continuously, 2 times per day on apparate Philips HD 11x. On the 4th day after transplantation on vascular doppler ultrasound of hepatic vessels, the arterial blood flow is absent. Thrombosis of hepatic arterial anastomosis was conformed at CTA. After 1.5 hours from the moment of detection absence of blood flow 20.11.2014y urgently was performed operation: “Relaparotomy, revision of arterial anastomosis, thrombectomy, arterial reanastomosis right hepatic artery of graft to the artery gastroepiploica dextra of recipient”. Postoperatively, the recipient along with the main treatment is carried out prevention of thromboembolic complications, against which appeared hemorrhagic discharge on the control drainage. A gradual decrease during the day dose of antplatelets was the cause of arterial retrombosis. In 23.11.2014, we performed operation on angio graphic system Allure Xper FD 20/10: “Superselective thrombolysis of arterial anastomosis”, blood flow in the artery restored. After 2 days of regional thrombolysis (9 days after transplantation) marked retrombosis of arterial anastomosis and 25.11.2014. was again made endovascular operation: “superselective thrombolysis into the arterial anastomosis” with the restoration of blood flow in the hepatic artery.

Results: As a result of ongoing timely correction of thrombohemorrhagic complications, the patient was discharged home on outpatient treatment and observation of the transplant surgeon in city clinical hospital №7.
**O26**

**LIVER TRANSPLANTATION EXPERIENCE IN SYZGANOV’S NATIONAL SCIENTIFIC CENTER OF SURGERY**

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**Introduction:** Liver transplantation program started in 2011, and for today seven different hospitals of the country performed about 60 liver transplant operations. The main problem that hinders the wide implementing of liver transplantation in Kazakhstan is poor development of regularity of cadaveric organ donation system. That is why most number of operations was done from living donors.

**Materials and methods:** Since December 2011, Syzganov's National Scientific Center of Surgery has performed 22 liver transplantations for adult recipients with end stage liver disease. 17 – living donor liver transplantations (LDLT), 5 – deceased donor liver transplantations (DDLT). Etiology of end stage liver disease was presented as below (fig. 2): 16 patients (72.7%) have had liver cirrhosis caused by viral hepatitis; other cases distributed between autoimmune hepatitis – 3 (13.5%), primary biliary cirrhosis – 1 (4.6%), secondary biliary cirrhosis founded on congenital biliary atresia – 1 (4.6%), idiopathic liver cirrhosis – 1 (4.6%). The patient's age ranged from 20 to 52 years. MELD score ranged from 13 to 25.

**Results:** Donors in LDLT surgery. Extended left lobe for grafting was preferred in 6 cases (35.3%); right lobe – in 10 cases (58.8%), and 1 case (5.9%) – the right posterior lateral sector of the liver. Duration of donor’s surgery was between 5 hours 10 minutes and 8 hours and 15 min. The most significant intraoperative blood loss was 1350 ml, in the initial stages of implementation of technology; with the improvement of surgical techniques, the use of modern blood-preserving equipment and surgical wound retractors, blood loss significantly reduced, for 70 ml in the best case.

**Recipients:** For today, the greatest period of follow-up of patients after LT is 40 months. Of the 22 operated recipients, 6 (27.3%) died in early post-operative period: another 16 (72.7%) lead a normal lifestyle, receiving a minimal immunosuppressive therapy (tacrolimus, with a target concentration of 3-5 ng/ml). In patients with cirrhosis of viral etiology, there are no cases of viral hepatitis reinfection.

**Conclusions:** 1. Preliminary findings based on a small experience showed a good perceptiveness of developing of Liver Transplantation program in Kazakhstan. There is reason to believe that the number of such operations in the Republic of Kazakhstan will increase in the future.

2. The development of living donor liver transplantation program in the Republic of Kazakhstan looks a good option; however, cadaveric donor transplantation program is preferable for developing, because of high risk of complications in donor surgery.

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**O27**

**IMMUNOLOGIC PROCESS OF RENAL TRANSPLANTATION**

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**Introduction:** Most important immunologic problem is rejection of graft by host. Humoral and cellular responses are evaluated by immune tests. Immunological tests are made to predict pre-transplantation potential risks and to make clear the reason of post transplantation immunologic response and reason.

Aim of this study is to make the most useful and most cost effective algorithm of immunological risk assessment for pre and post transplantation risk management with our previous experiences.

**Materials and Methods:** Last five (5) years’ complement dependent cross-match (CDC), flow-cytometry cross-match, panel reactive antibody screening and specificities, single antigen assay and complement 1q (C1q) study results are evaluated. During the evaluation process duration cost-effectiveness, sensitivity and specificity, clinical usefulness of all these tests are utilized.

**Results:** For living and cadaveric transplantations algorithms are made. For cadaveric transplantations HLA typing study with A,B and DR alleles. Although post-transplantation DSAs are hard evaluate which are produced against HLA-C, HLA-DQ, HLA-DP. Duty this reason we prefer to study pre transplantation HLA-C, DQ and DP alleles. Specific PRA studies may not always reflect right antibody percentages and MFI values. As a result of this of PRA positive patients we decided to study Luminex single antigen assay before and after the transplantation. Not all the HLA antibodies may not bind C1q. HLA antibodies which bind C1q are the important antibodies for rejection. To detect HLA antibodies which bind C1q we study C1q assay by Luminex.

**Conclusions:** With direction of this algorithm we are now able to maintain a chance for our patients who are top waiting lists. Anti HLA antibodies' positivity, percentage, specificity, MFI values, DSA positivities, and C1q binding activity are important for making treatment and desensitization protocols.
O28
EVALUATION OF GRAFT REJECTION RISK OF RENAL TRANSPLANT RECIPIENTS AT THE POSTOPERATIVE FIRST YEAR IN OUR INSTITUTION

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Introduction: The aim of this study is to evaluate the graft rejection risk of renal transplant recipients one year after the operation who were undergone kidney transplantation between January 2011 and March 2012.

Materials and Methods: Seventeen patients (14 men, 3 women, mean age 42.5±14.7) were undergone kidney transplantation in this period. One of them was transplanted from cadaveric donor and other 16 were transplanted from living donors (9 living-related, 7 non-related). Mean pre-transplant hemodialysis duration was 18.2±17.1 months. Mean HLA mismatch ratio and mean body mass index were 3.76±1.94 and 23.6±5.2 respectively. Anti-HLA Class I and Class II antibodies (panel reactive antibody screening test-Luminex method) C1q binding protein (enzyme immunoassay method), C reactive protein (CRP) and serum creatinine levels were analysed before and one year after the transplantation. Also lymphocyte cross-match (Luminex method) tests were studied at the first year after transplantation between patients’ samples and donors lymphocyte lysate samples (stored in the deepfreeze at -80 °C).

Results: Mean pre-transplant serum creatinine levels were 4.8±0.9 and 0.98±0.3 mg/dL at the postoperative first year. Mean CRP levels were 15.8±1.4 and 13.2±1.1 mg/L respectively. PRA tests were negative both in the preoperative and postoperative period. Luminex lymphocyte cross-match tests were all negative at the postoperative first year. Only in one patient C1q binding protein test was positive and Anti-HLA Class I and Class II specification tests (single antigen beads-Luminex method) were studied and they were all negative.

Conclusions: We considered that there were no patients with graft rejection risk according to our laboratory results. We thought that positive pre and postoperative C1q binding tests was not related with anti-HLA antibodies in our patient. Patients follow up are supporting our opinion. Further studies with more patient number and follow up time needed to support our idea.

O29
ANALYSIS OF PANEL REACTIVE ANTIBODIES IN RENAL TRANSPLANT RECIPIENTS DETECTED BY LUMINEX: A SINGLE INSTITUTION EXPERIENCE

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Introduction: The role of panel reactive antibody has gained universal acceptance in solid organ transplantation. This parameter is used to gauge the level of sensitization of prospective solid organ recipients. More than one-third of patients on waiting lists for kidney transplant are sensitized. Most have previously formed donor-specific and non–donor-specific serum antibodies and/or positive crossmatch by complement-dependent cytotoxicity and/or flow cytometry. In this manuscript we want to present the rate of positivity for human leukocyte antigen antibodies and describe the condensation of anti-bodies in human leukocyte antigen locus for renal pre-transplant recipients in our institution.

Materials and Methods: Between January 2011 and December 2012, 620 consecutive renal transplant recipients on the waiting list at the Baskent University were evaluated for this retrospective study. Panel reactive antibody screening and definition tests were studied with Luminex assays for the combination of class I (A, B, C) and class II antigens (DR, DQ).

Results: We found panel reactive antibody screening positivity in 20.4% of our patients on renal transplantation waiting list. Panel reactive antibody defining tests were commented meaningful in 12.2% of the whole list. We observed that only PRA Class I positivity seen in 2.2%, only PRA Class II positivity seen in 2.7% and both PRA Class I and Class II positivity seen in 7.2% of the defining tests.

Conclusions: The estimated risk of sensitization for patients with a living donor is determined from the combined results of the crossmatch with the donor and those of the recipient's panel reactive and donor-specific antibodies. Compared with complement-dependent cytotoxicity crossmatch, Luminex assays provide greater sensitivity and specificity in detection of donor specific antibodies.
**O30**

**GENOTYPE OF DONORS AND RECIPIENTS OF KIDNEY TRANSPLANTATION IN THE SOUTH KAZAKHSTAN**

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**Introduction:** In South Kazakhstan (SK) kidney transplantation is carried out on the basis of Shymkent City Hospital for emergency care (SCHEC) from March 2013 to present. During this period, 40 kidney transplantsations were performed. The aim of the study was to investigate the features of the epidemiology and results HLA-typing of recipients and their living related donors for kidney transplantation in SK.

**Materials and Methods:** A retrospective research of 20 pairs of "recipient-donor" who underwent a kidney transplant from a living related donor based SCHEC, Shymkent. Was studied 40 case histories. HLA-typing was conducted at the National Research and Production centre of transfusion Astana.

**Results:** Studying all the above aspects, the following results were obtained. The average age of the recipients and their living related donors was 34 years and 48 years respectively. By gender, the percentage of men donors account for 50% and 75% recipients- 75%. Women- donors also accounted for 50%, with 25% of women- recipients. The national composition of the 20 pairs of "recipient-donor" 3 pairs are Uzbeks, and the remaining 17 pairs Kazaks. Blood group (ABO) - 70% of couples had one blood group, and the remaining 30% are different, compatible group. The number of matches for HLA-typing of the following: mismatch 0-2 by locuses - 20 %, ny 3-4 locuses - 40 % and by 5 and more - 40 % pairs. Quantity of matches by HLA-typing: matches by 0-2 locuses - 25%, by 3-4 locuses - 45%, 5 or more locuses - 30% studied pairs. The share of match by 1 class - 50.6%, 2 class- 49.4%. Degree of relationship in the studied pairs follow: 55% are the mother and father, 20% - siblings (brothers and sisters), 25% - 2-3 family line of kinship. Genotyping results depending on the degree of kinship: match 0-2, 3 and 4, 5 or more are the parent locuses (mother and father) 0%: 55%: 45% respectively; sibsy- 25%: 0%: 75% respectively; Relatives 2-3 line of kinship- 60%: 40%: 0%, respectively. The dependence of the HLA-mismatches on the degree of relationship follow: mismatch with 0-2, 3-4, 5 or more parent locuses (mother and father) 27%: 73%: 0%, respectively; sibsy- 50%: 25%: 25% respectively, 2-3 family line kinships 0% 0%: 100%, respectively.

**Conclusions:** Analysis showed that the renal and actuarial survival of the recipients of the first year was 100%.

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**O31**

**PRIMARY FOCAL SEGMENTAL GLOMERULOSCLEROSIS RECURRENCE AFTER PEDIATRIC RENAL TRANSPLANTATION**

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**Introduction:** FSGS is one of the most common primary diagnosis leading to end stage renal failure in children. Focal segmental glomerulosclerosis (FSGS) is the primary diagnosis resulting in end-stage renal disease in approximately 12% of children receiving renal transplantation. For the subset of children with primary focal segmental glomerulosclerosis (FSGS), proteinuria and renal dysfunction recur after kidney transplantation. Unfortunately, FSGS may recur aggressively after transplantation and FSGS recurrence is an important cause of graft failure. Recurrent of the FSGS after transplantation is unpredictable and clear risk factors have not been identified. We evaluated pediatric renal transplant patients with FSGS as primary diagnosis for recurrence rate, risk factors for recurrence, long-term graft function, glomerular filtration rate and transplant survival.

**Materials and Methods:** Twenty three children (M/F: 13/10) with kidney transplant were enrolled to the study. Demographic data, immunosuppressive treatment, laboratory findings, rejection infections and type of donation, and graft loss were noted. Proteinuria was assessed using 24-hour urine protein excretion. The estimated glomerular filtration rate (eGFR) was calculated by Schwartz Formula. All living donor recipients were subjected to a course of 5 consecutive PP over 5 days in the immediate peri-operative period. However, deceased donor recipients underwent initial PP within 24 hour of implantation or after the transplantation. All patients also have received 3 course of PP over 6 days after the transplantation. A group of patient with unresolved proteinuria has received a prolonged course of PP during postoperative period. All deceased donor recipients treated with induction therapy by intustional protocol (Daclizumab). Maintenance immunosuppression was consisted of triple drug therapy including cyclosporine A or tacrolimus, MMF and Prednisone.

**Results:** Mean age of the patients at the time of the transplantation was 9.66±5.46 years. Mean follow-up time after transplantation was 4.87±3.08 years. Twelve (52.1%) recipients have proteinuria over than 4mg/m2/hour. Disease recurrence was observed in 4 (17.3%) patients. 2 patients developed recurrence in the first week of the transplantation. There were any difference between patients with and without recurrence for age, GFR and proteinuria before transplantation. All 4 patients with recurrence were treated with an additional course of PP while 3 of them have also received rituximab. The patient who did not receive
RTX had graft failure during his follow-up. One of the 3 patients that have received RTX had responded partially while 2 patients had remission. All patients tolerated the PP treatment without complications. We did not observe any major complication related to RTX treatment.

Conclusions: Recurrence of FSGS may be evident within hours after transplantation. The rapid recurrence of proteinuria following transplantation supports the notion that a causative factor responsible for inducing glomerular permeability is present in the circulation of some individuals. Preemptive PP may provide some protection from recurrence of FSGS. It is feasible to perform pre and post transplant PP without incurring increased risk of infection or bleeding. Rituximab may have an important role in treatment of post transplant recurrences of FSGS.

THE IMPACT OF HEPATITIS B VIRUS ON THE GRAFT AND OVERALL SURVIVAL IN KIDNEY TRANSPLANTATION PATIENTS

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Introduction: We aimed to investigate the impact of hepatitis B virus treatment in kidney transplantation patients by means of overall management, graft and overall survival.

Materials and Methods: A retrospective cohort study was designed to define the study and control group. Kidney transplantation patients were screened from 1993 to 2013. We formed two groups according to HBV positivity. A control group with negative viral hepatitis serology (HBV-) was selected randomly to match HBV positive population. In HBV positive patient group, the serological HBV status, antiviral treatment regimens and treatment responses were also divided in two sub-groups. First group (Group A) had viral suppression (indicated by negative HBV-DNA), compared with second group (Group B) who had HBV-DNA positive result despite antiviral treatment. Overall and graft survival curves were compared between groups by Kaplan Meier curve, life table and Wilcoxon test.

Results: We identified 32 HBV positive and 74 HBV negative kidney transplantation patients. The most common indications of kidney transplantation were hypertensive kidney disease, glomerulonephritis and vesicoureteral reflux. General characteristics and comparison of patient and control groups are given in table (see below). HBV positive group was treated with lamivudine alone (n: 23), lamivudine plus entecavir (n: 4), lamivudine plus tenofovir (n: 4), lamivudine plus entecavir plus tenofovir (n: 1). Antiviral resistance was tested in 10 patients yielding lamivudine resistance in 9 and adefovir resistance in 1 patient. In group A (n: 15) antiviral treatment was given due to either due to presence of HBsAg with negative HBV-DNA (n: 11) or due to HBV-DNA positivity (n: 4). In group B (n: 17), antiviral treatment was given due to either due to persistence of HBV-DNA (n: 7) or due to HBV-reactivation (defined as re-occurrence of HBV-DNA) during treatment (n: 10). There were no significant differences between group A and B in terms of both graft and overall survival.

The liver biopsy was performed in 17 patients of which 10 biopsies were prior to transplantation and 7 were performed after transplantation. In 3 patients high grade fibrosis were found and 14 patients had normal histology or mild hepatitis. Tacrolimus and pulse steroid treatments were more commonly used in HBV negative group whereas mycophenolate was more used in HBV positive population.

We found higher median graft survival in HBV positive compared with HBV negative group (69.5 months vs 54 months, respectively, p: 0.007). The 5- and 10-year overall survival rates were comparable between two groups (89-84% vs 96%, p: 0.107).

Conclusions: HBV positive patients have increased liver transaminase levels, have longer graft survival and similar median overall survival compared with HBV negative kidney transplantation patients.

<table>
<thead>
<tr>
<th>Variable</th>
<th>HBV positive</th>
<th>HBV negative</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (F/M)</td>
<td>9/23</td>
<td>29/45</td>
<td>0.378</td>
</tr>
<tr>
<td>Age (years)</td>
<td>46.5 (22-58)</td>
<td>41.0 (19.0-77.0)</td>
<td>0.142</td>
</tr>
<tr>
<td>AST IU/L</td>
<td>19.0 (12.0-113.0)</td>
<td>17.0 (9.0-97.0)</td>
<td>0.005</td>
</tr>
<tr>
<td>ALT IU/L</td>
<td>31.5 (12.0-144.0)</td>
<td>18.0 (6.0-85.0)</td>
<td>0.001</td>
</tr>
<tr>
<td>Graft survival (months)</td>
<td>69.5 (19.0-240.0)</td>
<td>54.0 (2.0-224.0)</td>
<td>0.007</td>
</tr>
<tr>
<td>Post-transplantation malignancy</td>
<td>4 (12.5%)</td>
<td>6 (8%)</td>
<td>0.35</td>
</tr>
</tbody>
</table>

Immunosuppressive treatment (present/absent)

| Sirolimus                  | 12/20        | 23/51        | 0.330   |
| Tacrolimus                 | 15/17        | 58/16        | 0.002   |
| Cyclosporin                | 25/7         | 49/25        | 0.160   |
| Mycophenolate              | 25/7         | 38/36        | 0.004   |
| Mycophenolate mofetil      | 27/5         | 54/20        | 0.150   |
| Azathiopurin               | 4/28         | 10/64        | 0.579   |
| Sildenafil                  | 0/32         | 1/74         | NA      |
| Pulse steroid              | 12/20        | 39/26        | 0.04    |
**O33**

**VIRAL INFECTIONS IN PEDIATRIC RENAL TRANSPLANT RECIPIENTS**

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**Introduction:** Viral infections remain a significant cause of morbidity and mortality following renal transplantation. Although Cytomegalovirus is the most common opportunistic pathogen seen in transplant recipients, numerous other viruses may affect clinical outcome. Viral infections have potentially severe complications of transplantation, as they not only induce specific diseases, but they also favor the development of allograft damage, opportunistic infections and acute rejection. We evaluated the major viral infections seen following kidney transplantation and allograft outcomes in our pediatric patients.

**Materials and Methods:** We evaluated retrospectively 94 (F/M: 48/46) pediatric renal transplant recipients for the occurrence of viral infections and compared outcomes among these patients. Patients were divided into two groups those who developed an infection and those who did not. In these groups, we recorded induction therapy used at transplantation, immunosuppressive therapy given at discharge, acute rejection rate and patient and graft survival rates.

**Results:** The mean age of the patients was 15.5 ±5.3 years. Thirty-two recipients (34%) developed viral infections: Any significant correlation could not be shown between viral infections and immunosuppressive therapy. Cytomegalovirus infection is the most frequent viral infection after renal transplantation. EBV infection, polyoma virus associated nephropathy are the other frequent viral infection after renal transplantation. Graft loss in CMV infections had the largest quantity but it was not statistically significant (p>0.05). We observed a significant correlation between acute rejection and viral infections. Acute rejection rate significantly increased in patients with viral infection (31% vs. 16%). A significant correlation was shown between viral infection and graft loss (r=0.22; p=0.028).

**Conclusions:** Viral infections are common after kidney transplantation. And they are associated with acute rejection and graft loss. Organ transplant recipients are at an increased risk of a number of different viral infections. Patients should be monitored more carefully for provide against damage in transplanted kidney.

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**O34**

**PREVALENCE OF VIRAL HEPATITIS B AND C IN HEMODIALYSIS PATIENTS**

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¹Medservis Private Medical Centre; ²Institute of Experimental Surgery Named after E. Topchubashov; and ³Republican Clinic Urological Hospital Named after M. Javadzadeh, Baku, Azerbaijan

**Introduction:** Infections with hepatitis B virus (HBV) and hepatitis C virus (HCV) are well-known and important causes of liver disease in end-stage renal disease (ESRD) patients on hemodialysis (HD). While prevalence of HBV and HCV in patients with ESRD who are undergoing dialysis has decreased significantly during the past few decades, it still remains a distinct clinical problem. Prevalence of viral infections such as HBV and HCV is higher compared to normal population. The immunosuppressive nature of renal disease often leads to chronicity of the HBV and HCV infections and an opportunity for nosocomial spread of the infection among dialysis patients.

**Materials and Methods:** The aim of this experiment was assessing prevalence of viral hepatitis in HD patients of Azerbaijan Republic. We enrolled 2634 patients from 32 different hemodialysis centers during 2014. Liver enzymes, viral hepatitis markers (HBsAg, Anti HBs, Anti HCV), age, duration of HD treatment, chronic viral hepatitis contamination probability (blood and blood replacement transfusion) were investigated. For patients with positive HBsAg and Anti HCV PCR-based methods were used for qualitative, quantitative and viral genotyping (HCV) detection.

**Results:** General population age was in range from 14 to 83. Duration of HD treatment was 1-15 years. 56% of patients (1475) were male, the rest 44% (1159) were female. 152 patients (5.77%) were anti HCV positive, 49 patients (1.86%) used to have mixed (HBV+HCV) infection. Positive Anti HBs was found in 235 patients (8.9%). The obtained range of AST was 5 to 249 IU/ml and ALT was 5 to 220 IU/ml. HBV DNA was checked in 101 patients and was found positive in 84 patients (3.19%). HCV RNA was checked in 251 patients and was found positive in 191 patients (7.25%).

**Conclusions:** Statistically, viral hepatitis contagion risk and HD treatment duration increases in direct proportion. The mortality and incidence levels of HD patients are increasing because of occult hepatitis types. Required precautions such as vaccination, determination of infection and starting necessary medical treatment can prevent the new infection risk. The government should provide more support for the vaccine, especially for the vaccination of high-risk groups, such as HD patients and medical staff, as the cost of treatment is much higher than the cost of vaccination.
THE ROLE OF ADJUVANT THERAPY IN PREPARING PATIENTS FOR SURGERY CLOSELY RELATED KIDNEY TRANSPLANTATION IN THE REPUBLIC OF UZBEKISTAN

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Introduction: It is well known intoxication is an inevitable component of a large number of diseases. Intoxication is of two types: endogenous and exogenous. Recently, more common type endogenous intoxication. In the Republic of Uzbekistan for 2015 recorded 172 thousand. Of patients with diseases of them with chronic renal failure (CRF), more than 18 thousand. And 1,888,000 suffer ESRD. (Daminov BT, Zufarov A.K., 2014). To prepare patients for renal transplantation in the world uses complex therapeutic procedures using software DG. Despite this, each transplant center has its own treatment protocol for the preparation of this difficult group of patients to the TA. In this regard, we posed the following purpose: to study the role of preoperative adjuvant therapy in the preparation of patients for surgery on TA.

Materials and Methods: In the study group included 38 patients who were preparing for renal transplantation from living close relative (kinship 1stepen) donor and were on hemodialysis for a period of 3 months to 5 years. In the study group there were 25 men and 13 women. Age of recipients ranged from 18 to 48 years of age donor 23 to 58 years. Patients were distributed according to the underlying disease leading to ESRD, as follows: chronic glomerulonephritis - 26, chronic pyelonephritis - 9 and condition after nephrectomy for kidney stones - 3 patients. The study involved two groups of recipients, which were distributed as follows: 1 group - using complex therapy of 28 patients and group 2 - without the use of adjuvant therapy, respectively - 10.

Preparing patients for surgery begins 14-21 days prior to surgery, depending on the severity of the patient’s condition. In the preoperative clinical and laboratory tests included: complete blood count: hemoglobin and blood cells, blood chemistry: protein fraction, liver enzymes, amylase, potassium, calcium, phosphorus. It should be noted that 25 patients in the study group were identified hepatitis «B» and «C», and all of these patients had high levels of liver enzymes.

All 38 patients in the first and second groups were found to have low hemoglobin and blood cells, total protein, and high numbers of liver enzymes.

Patients first group received a course of adjuvant therapy:
1. Erythropoietin
2. drugs and one-ferrous
3. gepatorotektory
4. 20% albumin
5. vitamins «B» and «C».

Accordingly, patients in the second group except software hemodialysis sessions of drug therapy does not work.

Results: A comparative analysis of parameters of postoperative complications (n = 38 up to 3 months follow-up) between two groups of recipients, it was noted that in the group using the combined therapy (n = 28) at the lower rate of complications, 94.3%, than in the group patients (n = 10).

Conclusions: The results of this study showed that the incidence of complications after transplantation in this group of patients initially severe depends on close to normal hemoglobin levels, levels of total protein, albumin, liver enzymes and blood electrolytes, in the preoperative preparation, which can be achieved only with the help of correctly selected the complex therapy.

OUTCOME OF RENAL TRANSPLANTS FROM DECEASED DONORS WITH ACUTE KIDNEY INJURY: IS IT SAFE TO PROCEED?

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1St George’s University Hospitals NHS Foundation Trust; and 2Croydon University Hospital NHS Trust, London, United Kingdom

Introduction: Deceased donor kidneys (DDK) are often subjected to acute kidney injury (AKI) before procurement. This AKI is secondary to both ischaemic-hypoxic-insult and nephrotoxic injury. This injury is mostly reversible if the patient survives through the critical phase. However use of such kidneys can have an impact on the outcome of renal transplant (RTx). In this study we have analysed the outcome of RTx from DDK with AKI. We used Risk, Injury, Failure, Loss and End stage kidney disease (RIFLE) criteria developed by ADQI (Acute Dialysis Quality Initiative) to classify DDK.

Material and Methods: In this retrospective study we analyzed our RTx data between 2008 and 2013. We recorded donor and recipient demographics and analyzed outcome of transplants in terms of allograft survival at 6, 12 and 24-months. Statistical Package for the Social Sciences (SPSS 19) was used for data analysis. Differences between the characteristics of groups were compared using one-way ANOVA test and chi-square for categorical variables. Kaplan Meier was used for graft survival analysis and difference in
groups analyzed using log rank test. P value of <0.05 was considered statistically significant.

**Results:** There were a total of 332 deceased donor RTx during this period. We divided them into; Control group (n=294), risk group (n=28) and injury group (n=10). There were no DDK in failure or loss groups. Basic demographics of the groups are shown in table 1. Graft outcomes in table 2 and figure 1.

**Conclusion:** DDK with AKI have similar long-term outcome as for DDK without AKI. Therefore they can safely be an addition to the deceased donor pool.

### Table 1: Basic Donor Characteristics and Demographics

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Control (n=294)</th>
<th>Risk (n=28)</th>
<th>Injury (n=10)</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender M/F</td>
<td>159/135</td>
<td>20/8</td>
<td>6/4</td>
<td>0.202</td>
</tr>
<tr>
<td>Mean age</td>
<td>50.34</td>
<td>49.07</td>
<td>46.6</td>
<td>0.695</td>
</tr>
<tr>
<td>Type DBD/DCD</td>
<td>208/86</td>
<td>16/12</td>
<td>7/3</td>
<td>0.616</td>
</tr>
<tr>
<td>Hypertension</td>
<td>68</td>
<td>8</td>
<td>5</td>
<td>0.333</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>21</td>
<td>2</td>
<td>0</td>
<td>0.681</td>
</tr>
<tr>
<td>Smoking</td>
<td>123</td>
<td>13</td>
<td>5</td>
<td>0.748</td>
</tr>
<tr>
<td>BMI</td>
<td>26.5</td>
<td>24.7</td>
<td>26.7</td>
<td>0.315</td>
</tr>
</tbody>
</table>

### Table 2:

<table>
<thead>
<tr>
<th>Mean S/creat [95% CI]</th>
<th>Control (n=294)</th>
<th>Risk (n=28)</th>
<th>Injury (n=10)</th>
<th>Sig P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-mo</td>
<td>148.5 [139.7-157.4]</td>
<td>156.3 [130.1-182.6]</td>
<td>136.4 [104.6-168.2]</td>
<td>0.755</td>
</tr>
<tr>
<td>12-mo</td>
<td>138.2 [128.6-147.7]</td>
<td>139.8 [117.2-162.1]</td>
<td>120.7 [98.0-142]</td>
<td>0.764</td>
</tr>
<tr>
<td>24-mo</td>
<td>140.4 [127.2-153.5]</td>
<td>161.4 [118.4-204.5]</td>
<td>122.4 [95-155]</td>
<td>0.555</td>
</tr>
</tbody>
</table>

**Introduction:** Pulmonary complications after renal transplantation have been reported to range from 3% to 17%. Renal transplant recipients requiring ICU admission for acute respiratory failure (ARF) are associated with high mortality and graft loss rates. The objective of this study was to evaluate renal transplant recipients admitted to ICU in order to identify incidences and causes of ARF in the postoperative period and compare clinical features and outcomes between those with and without ARF.

**Materials and Methods:** We retrospectively screened the data of 540 consecutive adult renal transplant recipients who received their grafts in a single transplant center from January 2005 through March 2015. Among them, patients admitted to ICU during this period were included for the analysis of those with ARF defined as severe dyspnea, respiratory distress, decreased oxygen saturation (<92%), hypoxemia (PaO2<60mmHg) or hypercapnia (PaCO2>60mmHg) on room air or requirement of noninvasive or invasive mechanical ventilation. Demographic, clinical and laboratory data were collected. Acute Physiology and Chronic Health Evaluation II (APACHE II) and Sequential Organ Failure Assessment (SOFA) scores at ICU admission and lengths of ICU, hospital stay and mortality were assessed.

**Results:** Among the 540 adult renal transplant recipients, 55 (10.7%) were admitted to ICU, including 26 (47.3%) admitted for ARF. Mean APACHE II and SOFA scores of those with ARF on admission were 19.7 ± 11.8 and 5.4 ± 3.7, respectively and mean patient age was 42.4 ± 12.6 years with 81% males. Median time from transplantation to ICU admission was 10 months (0-67). The leading causes of ARF were bacterial pneumonia (56%) and cardiogenic pulmonary edema (44%). Acinetobacter baumannii was isolated in 15% of the patients. Mean partial pressure of arterial oxygen to fractional inspired oxygen ratio was 174 ± 59, invasive mechanical ventilation was used in 13 patients (50%) and noninvasive mechanical ventilation was used in 8 patients (31%). Shock at ICU admission was seen in 11 patients (42.3%) and vasopressors were needed in half of them. A history of acute rejection before ICU admission was seen in 10 patients (67%). The leading causes of ARF were bacterial pneumonia (56%) and cardiogenic pulmonary edema (44%). Acinetobacter baumannii was isolated in 15% of the patients. Mean partial pressure of arterial oxygen to fractional inspired oxygen ratio was 174 ± 59, invasive mechanical ventilation was used in 13 patients (50%) and noninvasive mechanical ventilation was used in 8 patients (31%). Shock at ICU admission was seen in 11 patients (42.3%) and vasopressors were needed in half of them. A history of acute rejection before ICU admission was seen in 10 patients (38.5%). Renal replacement therapy (RRT) was administered in 13 patients (50%). RRT was more frequently used in patients with ARF when compared to those without ARF (50% vs 23%, p=0.04). The overall mortality was 16.4%. Patients admitted for ARF had similar lengths of ICU, hospital stays and mortality when compared to those without ARF (p>0.05 for all). Regarding patients
with ARF, mortality was significantly high in those with shock at ICU admission (45.5% vs 6.7%, p=0.02), with higher SOFA scores on days 1, 2, 3 (p=0.001, p<0.001, p<0.001) and with diagnosis of pneumonia (38% vs 0%, p=0.02).

Conclusions: Acute respiratory failure accounted almost half of renal transplant recipients admitted to ICU in the postoperative period and main causes were bacterial pneumonia and cardiogenic pulmonary edema. Mortality of patients admitted for ARF was similar to those without ARF; but survival was worse in patients with shock at ICU admission, higher SOFA scores and diagnosis of pneumonia.

O38
PERCUTANEOUS DILATIONAL TRACHEOTOMY IN LIVER TRANSPLANT RECIPIENTS

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Department of Anesthesiology, Baskent University Faculty of Medicine, Ankara, Turkey

Introduction: Liver transplant recipients (LTR) may require percutaneous dilational tracheotomy (PDT) during the immediate postoperative period or later because of need for prolonged mechanical ventilation or airway issues. However, despite the increased risk of bleeding and infections, there is little data regarding the safety and effectiveness of PDT in LTRs. The aim of this study was to evaluate the safety and effectiveness, in terms of changes in oxygenation and lung compliance, of PDT in LTRs.

Materials and Methods: We reviewed the data of liver transplant recipients who underwent percutaneous dilational tracheotomy in Baskent University Hospital between January 2010 and March 2015. Collected data included demographics (age, sex, body weight, length); etiology of chronic liver failure; comorbidities; Child, Model for End Stage Liver Disease (MELD), acute physiology and chronic health evaluation II (APACHE II), and sequential organ failure assessment (SOFA) scores; length of hospitalization and mechanical ventilation; etiology of acute respiratory failure; pre-PDTPlatelet count and international normalized ratio (INR) values; partial pressure of arterial oxygen to fractional inspired oxygen ratio (P/F), and pulmonary compliance. Pre- and post-PDT values were compared using Wilcoxon test.

Results: Out of 136 LTRs 16 required PDT during the study period. All PDTs were performed by experienced intensivists and under bronchoscopic guidance using Percutwist or Ciaglia techniques. The mean age was 35.4±16.5 years and mean body mass index was 25.5±6.0 kg/m2. The mean Child and MELD scores were 10.5±1.9 and 23.5±7.7, respectively. The mean APACHE II on admission was 25.4±11.9 Pre-PDT platelet count and INR were 47000±41000 per μl and 2.0±0.8, respectively. The indication for PDT was prolonged mechanical ventilation for all patients. The etiology of acute respiratory failure was most commonly extrapulmonary (%87.5). The mean interval from transplantation to PDT was 355±870 days. The only major complication noted was left-sided pneumothorax in one patient. Six patients had minor, self-limiting bleeding from the tracheotomy site on the first day of post-PDT. There were no significant differences between pre-PDT and post-PDT P/F ratios (261±203 vs 264±132; p=0.534). However pre- and post-PDT pulmonary compliances were significantly different (0.02±0.02 L/cmH2O vs 0.03±0.02 L/cmH2O, p=0.002). The number of patients who required sedation significantly decreased after PDT (7 versus 1, P=0.03).

Conclusions: When performed by experienced intensivists using bronchoscopic guidance PDT is safe in LTR. PDT may also improve lung mechanics and decrease the need of sedation in these patients.

O39
CARDIOVASCULAR RISK ASSESSMENT AFTER RENAL TRANSPLANT AT AGE 70 AND ABOVE: ARE WE DOING IT RIGHT?

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Introduction: Renal Transplant (RTx) is associated with increase in life expectancy and improved quality of life. However its benefit at the age of 70yrs and above is still under controversies. In this present study we have used QRISK cardiovascular disease risk algorithm (QRISK2 and QRISK lifetime) to estimate the cardiovascular disease (CVD) risk status of recipients above 70yrs.

Materials and Methods: In this retrospective analysis of RTx data of our unit between 2008 and 2012 we identified 37 recipients who received their RTx at or after 70yrs of age [Cohort A]. We calculated their QRISK before RTx and then 1, 6 and 12 months after renal transplant and compared it with our patients who were less then 70yrs of age [Cohort B]. We used SPSS 21 for statistical analysis. P value of <0.05 was considered significant.

Results: During that period of 5yrs there were 489 RTx performed out of which 37 recipients (7.5%) were above 70yrs. There was no significant difference in preoperative CVD risk between two recipients of two cohorts [P = 0.6822]. Likewise at 1, 6 and 12 months there was no significant difference of CVD risk between two cohorts [P = 0.5624, 0.4822, 0.5214 respectively]. In recipient’s 70yrs and above
there was significant reduction in CVD risk noted at 6 and 12 months post RTx \(P=0.0442, 0.03682\).

**Conclusions:** Age at 70yrs is not associated with increased CVD risk following RTx. In contrary RTx significantly improves CVD risk at this age and hence improves long term morbidity and mortality.

**Tables**

<table>
<thead>
<tr>
<th>QRISK2 /QRISK-life time</th>
<th>Cohort A &gt; 70 (n=37)</th>
<th>Cohort B &lt; 70 (n=452)</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre transplant</td>
<td>18.5</td>
<td>16</td>
<td>0.6822</td>
</tr>
<tr>
<td>Post transplant 1 month</td>
<td>19.5</td>
<td>16</td>
<td>0.5624</td>
</tr>
<tr>
<td>Post transplant 6 months</td>
<td>12</td>
<td>14</td>
<td>0.4824</td>
</tr>
<tr>
<td>Post transplant 12 months</td>
<td>9.5</td>
<td>11.5</td>
<td>0.5214</td>
</tr>
</tbody>
</table>

**O40**

**ROLE OF FETAL CELLS IN COMPLEX TREATMENT OF DISSEMINATED INTRAVASCULAR COAGULATION SYNDROME**

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**Introduction:** Our objective was to evaluate the dynamics of clotting factors as protein C, Antithrombin-III (AT-III) and soluble fibrin monomer complex (SFMC) due to application of fetal cells in patients with disseminated intravascular coagulation syndrome (DICS).

**Materials and Methods:** 20 patients after chest and abdominal cavity operations, who developed postoperative DICS were included. Amount administered cells volume depended on the severity of the patient’s condition and was 0.15 ml per 1 kg of body weight. Introduction of the FC was carried out by intramuscular injection. Treatment was started immediately after the DICS was found in patient. The main points included AT-III, protein C, SFMC.

**Results:** In our observations in the study group on the first day of AT III was lower than baseline values by 16%, but higher than the control group of patients by 13%, which was 71 ± 0.4% \((p<0.05)\). Beginning with the second postoperative day value of AT III increased by 4%, and higher values of the control group - 19%, which amounted to 88 ± 0.4% \((p<0.05)\). 7 days after the operation parameters were exceeded the data obtained before surgery, 1.4 times, and the value of this indicator in the control group - by 33% and amounted to 114 ± 0.5% \((p<0.05)\).

Studies have shown elevated levels of both protein C in the application of FC. On the 2nd day postoperative period studied index level over the previous observation period by 36%, and the original values before surgery - 8%, and was 94 ± 0.5% \((p<0.05)\). Subsequently, noted a further increase in the quantities of protein C in the main group, and the seventh day after the operation, it exceeded the initial value of 1.9 times.

In the study group there was an increase in the values of SFMC first postoperative day 1.8 times that amounted to - 8 ± 1 mg% compared with the original data \((p<0.05)\). In the future, a decrease studied index, and on the seventh day after the operation, this value was lower than the initial values of 2.6 times, and with the value of the control group was lower - 2.6 times that amounted to 2.2 ± 0.2 mg% \((p<0.05)\).

**Conclusions:** The introduction of FC in the postoperative period in patients with DICS stabilize the condition of patients. This is reflected in the increasing levels of antithrombin III 1.4-fold \((p<0.05)\) and protein C by 2.1 times \((p<0.05)\) reduction of soluble fibrin monomer complex in 2.6 times \((p<0.05)\).
Materials and Methods: Between December 2008 and March 2015, 61 patients with end-stage liver and 179 patients with end-stage kidney disease received LDT in our center. The indication and timing, surgical techniques and complications, nonsurgical issues including rejection, infection, and advantages of LDT, patients and graft survival rates in the series were reviewed.

Results: All liver transplant recipients were cirrhotic patients, except for one patient with fulminant hepatic failure. Among the 61 cases, 29 (47.5%) and 19 (31.1%) were related to hepatitis C and B, respectively. Other causes included NASH 2 (3.2%), Wilson disease 2 (3.2%), Budd-Chiari syndrome 2 (3.2%), Alcohol-related 2 (3.2%), PBC 1 (1.6%), GDD 1 (1.6%), Biliary Artesia 1 (1.6%) and Cryptogenic 2 (3.2%). The overall 1 and 3 year survival rate of the recipients was 85.2% and 80.3%, respectively. There were 8 cases of biliary strictures, 2 arterial trombosis 3 (4.9%) and for 2 (3.2%) patients retransplants were performed. Biliary strictures had been managed and resolved by biliary stenting for 5 patients and hepaticojejunostomy in 3 patients. Living donor related kidney transplantation program has been started from 2010. Among the 179 patients 3 (1.67%) cases of retransplantation, 61 (33.5%) patient as preemptive transplantation has been performed. There are 18 cases of children below 15 years old and 8 cases from donors 70 years of age and older. The first year patient and graft survival were 98% and 96%, respectively.

Conclusions: LDT provides an excellent approach to addressing the problem of donor shortage, even though the operation is complicated, uncompromising and difficult with respect to the safety of the donors and receptors. Despite, living donor liver transplantation early technical hurdles having been overcome, perfection of technique is still necessarily. A successful kidney transplant improves the quality of life and reduces the mortality risk for most patients, when compared with maintenance dialysis. At present, LDT is a best choice for the patients with irreversible liver and kidney diseases.

O42
FIRST EXPERIENCES OF AZERBAIJAN REPUBLIC IN ESTABLISHING A LIVING-DONATION ORGAN TRANSPLANTATION PROGRAM

Mirjalal Kazimi, Elnur Faracov
Central Hospital of Oil Workers, Baku, Azerbaijan

Introduction: Because of the lack of the law about the brain death and allocation guidelines of cadaveric organ in Azerbaijan Republic, the cadaveric organ donation is still absent. Many patients with end-stage liver and renal diseases die waiting for a suitable donor. Living donor transplantation (LDT) would reduce the organ shortage. The living donor liver and kidney transplantation program in Azerbaijan has been started from 2008 and 2010, respectively. We describe the early experience of LDT based on data of our transplant center.

Materials and Methods: Between January 2013 and January 2015 we performed 21 OLT: 18 from living donor (1 – left lobe, 17 – right), 3 – from cadaver. Three patients after OLT received splenic artery embolization (SAE). Before OLT 2 recipients (both – female) with primary biliary cirrhosis, 1 – Hepatitis B Virus-related liver cirrhosis (male). Two patients after right lobe living OLT, one – cadaveric OLT. SAE in 3 cases were performed after 12, 8 and 6 month respectively.

Results: The age of the patients was between 2-80 years. 5675 (87.3%) of the catheters applied were temporary whereas 825 (12.7%) were permanent. 5720 catheters were applied to the internal jugular vein, 567 catheters were implanted to the subclavian veins, and 114 were applied to the femoral vein. Puncture of the artery occurred in 950 patients (14.6%) during the procedure, and 25 of these patients (2.6%) had a subcutaneous hematoma. No patient had lung trauma and there was therefore no need for removal of the catheter or a surgical intervention for the complications.

Conclusions: The internal jugular vein is the preferred location for catheter insertion as in the present study. Our low complication rate may be related to not preferring the subclavian veins unless there is an anatomic abnormality of the other major veins. Use of hemodialysis catheters are related with high complication rates, especially in the long term. Insertion of the catheters by specialized nephrologists may decrease the rate of using the subclavian veins to international standards.

O43
SPLENIC ARTERY EMBOLIZATION IN PATIENTS AFTER LIVER TRANSPLANTATION

Myltikbay Rysmakhonov, Marlen Doskali, Aliya Taganova, Aibolat Smagulov, Abay Baigenzhin, Zhaksylyk Doskaliyev
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Introduction: Hypersplenism (thrombocytopenia, leukocytopenia, anemia) syndrome and ascites after orthotopic liver transplantation (OLT) are not rare complications. Those conditions can treated by open splenectomy. However, splenectomy have many negative effects. As alternative surgical measure, splenic artery embolization (SAE) has been reported in literature. This report presents the early outcomes of SAE in 3 patients after liver transplantation, who had hypersplenism and/or ascites.

Materials and Methods: Between January 2013 and January 2015 we performed 21 OLT: 18 from living donor (1 – left lobe, 17 – right), 3 – from cadaver. Three patients after OLT received splenic artery embolization (SAE). Before OLT 2 recipients (both – female) with primary biliary cirrhosis, 1 – Hepatitis B Virus-related liver cirrhosis (male). Two patients after right lobe living OLT, one – cadaveric OLT. SAE in 3 cases were performed after 12, 8 and 6 month respectively.
The indications for SAE was based on clinical and ultrasonographic investigation (ascites, splenomegaly) and laboratory criteria (thrombocytopenia, when PLT<60x103/mm3, leukocytopenia, when WBC<2x103/mm3). 2 recipient has leuko-thrombocytopenia and refractory ascites, 1 – only thrombocytopenia. SAE was performed via a percutaneous femoral artery approach by interventional radiologists in operating room under local anesthesia. All patients has preoperative antibiotic prophylaxis and desensitize medication. After selective celiac and splenic arterial angiographies were obtained to determine the target splenic artery branches. Transcatheter splenic artery branches occlusion was performed by the deployment of embolic device.

Results: The size of spleens were between 8.5-12.5 cm to 17.5-22.0 cm. Patients ascites were more than 1000 ml. Total spleen embolization volume was approximately 70%. Ascites decreased after SAE in all patients. After SAE, WBS level normalized for 3 days. One patient (who has leukocytopenia), WBS level normalized for 3 days. After SAE: 2 patients had analgesia none-needed abdominal pain, 2 – had fever (max To was 38.5°C) during 3 days. The patients was discharged 6, 8, 9 days after SAE. One patient had perisplenic abscess without fever 1 month later after discharge. Abscess was draned under ultrasound control. Than that patients discharged.

Conclusions: SAE, although limited by the minimal cases, is a safety and effective minimally invasive methods for treatment hypersplenism and ascites of recipients after OLT. Also, it is proved in patients who have immunosuppressive condition as alternatives to open total splenectomy.

<table>
<thead>
<tr>
<th>Case</th>
<th>Sex</th>
<th>Age</th>
<th>Indications</th>
<th>Time after OLT, day</th>
<th>Complication</th>
<th>Discharge day after SAE</th>
<th>Outcomes</th>
</tr>
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<tbody>
<tr>
<td>#1</td>
<td>F</td>
<td>20</td>
<td>TcP+As</td>
<td>382</td>
<td>abdominal pain (+ abscess)</td>
<td>6</td>
<td>Improve TcP &amp; As (+ abscess)</td>
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<tr>
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<td>TcP</td>
<td>243</td>
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<td>8</td>
<td>Improve TcP</td>
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<tr>
<td>#3</td>
<td>M</td>
<td>41</td>
<td>TcP+LcP+As</td>
<td>194</td>
<td>fever</td>
<td>9</td>
<td>Improve TcP, LcP &amp;As</td>
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</tbody>
</table>

**Table**

**O44**

THE SAFETY OF HAND-ASSISTED LAPAROSCOPIC LIVING DONOR NEPHRECTOMY: THE EXPERIENCE OF 7TH CLINICAL HOSPITAL OF ALMATY WITH 100 CASES

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Introduction: Living kidney donation represents an important source of organs for patients with end-stage renal failure. Over the past decade, laparoscopic donor nephrectomy has replaced the conventional open procedure in many transplant centers. Hand-assisted laparoscopic donor (HALD) nephrectomy has been performed at our institution since May 2012 from the beginning of kidney transplantation program. Through March 2015, a total of 100 HALD procedures have been performed.

Materials and Methods: The HALD procedure consists of a hand-port incision as well as two 12-mm ports. Mean donor age was 38.7 ± 12.8 yr, BMI was 27.4 ± 6.0, there were 64 males, and the left kidney was removed in 95 patients.

Results: All procedures were successfully completed. Laparoscopic donor nephrectomy resulted in skin to skin time (median 120 min. ±26, warm ischemia time 86 sec ± 26 sec, blood loss (100 mL ±50 mL). Conversions did not occur. All donors recovered well with a mean hospital stay after donation of 4.1 ± 2.3 d. Except 2 cases of lymphorrhea, there wasn’t any complications (bleeding, reoperation, incisional hernia, bowel obstruction and etc.) All kidneys were successfully implanted. Two recipients experienced DGF. No ureter complications in recipients.

Conclusions: HALD is a safe procedure for the donor with good recipient outcome.

**O45**

SIGNIFICANCE OF COLONOSCOPIC FINDINGS IN PATIENTS WITH KIDNEY TRANSPLANTATION

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Introduction: We aimed to investigate the colonoscopy findings in patients with kidney transplantation at the post-transplantation period.
Materials and Methods: We retrospectively analyzed kidney transplantation patients who had colonoscopy examination for various indications between 2011 and 2015.

Results: A total of 81 patients (25 F/56 M) with a mean age of 39 y (18-64 y) were identified. The mean time of post transplantation follow up was 9 years (1-29 y). The most common indications for colonoscopy were diarrhea (41%), anemia (29%), gastrointestinal bleeding (12%), abdominal pain (12%) and unexplained weight loss (6%). Either colitis or ileitis or both were diagnosed in 20 (25%) patients, whereas polyps were found in 9 (11%) patients. All of the patients were routinely screened for CMV infection by means of tissue immunohistochemistry staining. One patient presenting with hematochezia was diagnosed as CMV colitis. The rest of the colitis/ileitis cases were diagnosed to have non-specific inflammation. Indications for colonoscopy were not correlated with age, post transplantation follow up or use of immunosuppressive drug. A subgroup analysis for mycophenolate induced colitis found that 88% patients used mycophenolate and presence of colitis/ileitis had no statistical correlation with its use. In the presence of a lower GI symptom, only significant predictor of presence of colitis/ileitis is a high CRP value (> 5 mg/dl, p = 0.02).

Conclusions: Colitis and/or ileitis is a relatively common finding in patients with kidney transplantation. Opportunistic infections, mycophenolate use or mild degree of indeterminate colitis/ileitis disease may be the underlying condition. CMV infection should be screened in all of the patients since chronic immunosuppression may lead to serious complications and death.
P1
DEVELOPMENT OF AN INFORMATION MODEL FOR KIDNEY TRANSPLANT WAITING LIST

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Murat Efe Aras,² Dilek Okutur,¹ Alp Demirag¹
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Introduction: Deceased donor kidney transplantation is unique among surgical procedures in that it is an urgent procedure performed in an elective population. Because of the inclusion of histocompatibility matching in the allocation algorithm, it has not been possible to accurately determine when a given patient will be called for transplantation. This situation is also called unpredictability of allocation. Patients on the active transplant list can be called for a transplant at any time. As a result, every effort must be made to optimize their health according to best practices and published clinical practice guidelines. In parallel, dialysis units, nephrologists, and the patients themselves must keep transplant programs appraised of major developments in the patient’s health that could be relevant to their transplant candidacy and posttransplant management.

Materials and Methods: Once the patient is placed on the transplant waiting list after undergoing an initial extensive evaluation, continued surveillance is required for all patients. In such patients, the cardiovascular status may deteriorate during the prolonged wait for a kidney. Therefore, we developed a kidney transplant waiting list surveillance software program which alerts organ transplant coordinator on time regarding which patient needs which workup.

Results: The new designed software has a database of our waiting patients with their completed and pending controls. The software also has built-in functions to warn the responsible staff with an e-mail. If one of the controls of a recipient delayed the software sends an automated e-mail to the staff regarding the patient and delayed control(s). The software has been developed with C# programming language which supports Microsoft Windows’ operating system environments. The database is sqlite which is freeware and widely used on small data projects. The software has the following functions

Patient communication info: Software has a patient communication info entry and capability which helps the responsible staff to reach patients easily if needed.

Search: We designed the software to search the list based on the following parameters; surname, national ID, patient ID, blood group, PRA values(positive or negative), viral markers statement (Hepatitis B, C or HIV).

Alert list: when software is started list of patients who required medical workup are shown (popup) at the first screen.

Alert e-mail: If any patient needs work up the system sends an alert e-mail to the responsible staff.

Control entry: When a patient submits a new work up result, the user can enter the data to the system. System management: Users can add or delete a control parameter definition.

Conclusions: As of January 2014, a total of 21,000 patients were registered on the National kidney transplant waiting list in Turkey and the kidney transplant waiting list had been expanding by 2000 to 3000 patients each year. Therefore computerize waiting list program is crucial to help to transplant centers up-to-date their patients on time.

P2
ULTRASOUND EVALUATION OF KIDNEY TRANSPLANT IN EARLY POSTTRANSPLANT PERIOD

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Introduction: The aim of this study was to evaluate the kidney graft after transplantation to assess the ability to restore blood flow, time required to achieve functional recovery after surgery and the possibility of differentiating normal from pathological grafts using color Doppler ultrasound (CDUS) flow in early posttransplantation period.

Materials and Methods: Sixteen recipients underwent renal CDUS. CDUS was repeated on the allograft 24 h, 1, 2, 3, 7, 15 and 30 days after transplantation. Recipients were evaluated on the basis of clinical and biochemical values, as well-functioning allografts and acute pathology. Results of CDUS: RI were compared to results of biochemical values.

Results: After living donor kidney transplantation in early postoperative period the average size of kidney was 10.7x5.1cm, parenchyma 1.7cm. The structure of parenchyma was inhomogeneous in 14 cases, and homogeneous in 2 cases. Pyramid layer intensive in 6 cases, moderately intensive in 7 cases, and no features in 3 cases. Pyelocaliceal system condensed in 1 case. Hematoma in paranephrium was found in 5 cases, and free fluid was found in 5 cases. Vascularization of allografts in 14 cases were satisfied; RI sensitivity was 93%, specificity was 83%.

Conclusions: This study shows that CDUS, especially RI is useful in postoperative evaluation of transplanted kidneys in early period to confirm the good condition of the allograft despite still excessive blood parameter values.
P3
ANALYSIS OF TRUST TO HEALTH CARE PROFESSIONALS, EMOTIONAL INTELLIGENCE, KNOWLEDGE AND ATTITUDES TOWARDS ORGAN DONATION WITHIN POLISH AND TURKISH SOCIETIES

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Introduction: One of the main problems in the world is lack of deceased donors comparing to number of patients waiting for transplantation. The family member refusal rate for a donation is very high. For this reason, the main objective of this research was to identify the level of trust to health care professionals and emotional intelligence among Polish and Turkish societies so as to make an analysis of psychological variables associated with knowledge and attitudes toward transplantation.

Questions of study:
1. Are there statistically significant differences in attitudes towards transplantation of organs between Poles and Turks?
2. Is there a correlation between the level of emotional intelligence and presented attitudes in researched groups (Poles and Turks)?
3. Is there a statistically significant relationship between the trust to health care professionals and attitudes towards transplantation?
4. Is there a link between the level of knowledge regarding organ donation and attitudes about transplantation in different groups of respondents?

Materials and Methods: 100 people from Turkey and 100 people from Poland took part in a survey. Respondents were students between 18-25 years old. In the research Questionnaire regarding attitudes towards organ transplantation and organ donation, survey about trust to health care professionals and Shuttle Emotional Intelligence were used. First two questionnaires were created for the research by the authors of the abstract. Shuttle Emotional Intelligence is a worldwide used psychological scale.

Results: The results of the statistical analyze (T-student) indicated lack of significant differences in attitudes towards organ donation and organ transplantation in examined groups (Polish and Turkish students). Analysis of the results of research (r-Spearman rank correlation) demonstrated significant correlations between the level of knowledge about organ transplantation and presented attitudes within examined groups. Another step in statistical analyses (r-Pearson rank correlation) of the research showed significant correlation between the trust to health care system and presented attitudes towards organ donation and transplantation. The last statistical analysis (r-Pearson rank correlation) showed significant correlation between emotional intelligence and attitudes towards organ donation and transplantation. The higher level of emotional intelligence the more positive attitudes on organ donation are presented.

Conclusions: One of the most important results of the research is confirmation of the importance of knowledge regarding organ transplantation for proclaimed attitudes. The higher the knowledge about transplantation is, the higher the rate of positive attitudes. Own research results justify the further conduct of interdisciplinary research in the field of transplantation taking into account the psychological variables.

P4
THE ROLE OF THE EFFECTIVENESS OF TREATMENT OF HYPERTENSION WITH END-STAGE RENAL FAILURE: LITERATURE REVIEW

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Review: In hemodialysis population cardiovascular diseases are the leading cause of mortality, ranging from 50 to 70% (Tomilina NA, 2009; Foley RN et al., 1998; Zoccali C. et al., 2000). In patients with end-stage renal disease (ESRD) the risk of premature death from cardiovascular disease at a young age is more than 100 times higher than in the general population, and with increasing age difference is reduced up to 20 times (Levey A. et al, 1998). For more than ten years in the structure of mortality from cardiovascular events play a major role of hypertension, which has a direct impact on the increased risk of cardiomyopathy in patients on hemodialysis (Tomita J. et al., 1995; Charra B. et al., 1996; Cohén EP, 2000; Zoccali C. et al., 2002; Fernandez LM et al., 2005). According to various authors the prevalence of hypertension in patients with end-stage chronic renal failure on hemodialysis, shooting up from 50 to 95% (Cohén ER, 2000; Mazzuchi N. et al., 2000; Rocco MV et al. 2001; Horl MP et al., 2002). Hypertension is present from 72.7% (Goodkin DA et al., 2003) to 89% (Pérez-García R., 2009) hemodialysis patients in Europe, 55.9% of patients in Japan and among hemodialysis population in the United States 83.2% (Goodkin DA et al., 2003). According to the register of the Russian Dialysis Society of Hypertension was detected in 63% of patients (Tomilina NA, 2009). Arterial hypertension is observed in approximately 15%–20% of the general population. In contrast, 80%–90% of patients with ESRD are hypertensive (blood pressure greater than 140/90 mmHg);
half of them will remain hypertensive once dialysis is started and will therefore need some form of pharmacotherapy. The relevant aspects of the epidemiology and pathophysiology of hypertension in ESRD and more extensively with the therapy of this problem as a risk factor for the high cardiovascular mortality observed in this population. Nearly 17% of adults in the United States have Chronic Kidney Disease (CKD), and one of the most common causes of CKD is hypertension. Treatment of hypertension has become the most important intervention in the management of all forms of Chronic Kidney Disease. Including patient nonadherence and psychological distress are highly prevalent among ESRD patients, and both have been found to contribute to greater morbidity and earlier mortality in this population. So the psychological aspects of support also play a major role in patients with end-stage renal failure. Unsatisfactory of blood pressure in dialysis patients is one of the main reasons for the fact that in contrast to the general population, where there have been significant advances in reducing morbidity and mortality from cardiovascular disease among hemodialysis patients, despite the technological advances of the procedure, there was progressive growth of these indicators (Levey SA et al., 1999; Scribner BH, 1999; Dhakal MP et al., 2000; Rocco MV, 2001) [8].

Conclusions: Therefore, we must take into account all aspects of the treatment of hypertension in patients with end-stage renal failure.

Materials and Methods: Material of study was kidney tissue samples taken from 30 patients that died from various brain tumors. Kidney tissue samples were fixed in 10% neutral buffered formalin solution. After traditional procedure histological sections were dyed with hematoxylin, eosin, Van Gieson's and Mason's trichrome, congo-red. Then silver impregnation and PAS reaction were conducted. Histological examinations were done by Axioskop 40, CarlZeiss, Germany microscope, at ’100 and ’400 magnifications.

Results: Patomorphologic tissue changes were found in all 30 cases that accounts for 100%. From there: 23 cases (73.6%) of discirculatory-hypoxic alteration of nephrothelial tubules (acute tubular necrosis), 3 cases (10.0%) of chronical tubular-interstitial nephritis, 2 cases (6.6%) of interstitial nephritis due to sepsis, 1 case (3.3%) of glomerulosclerosis due to arterial hypertension, 1 case (3.3%) of thrombotic microangiopathy.

Conclusions: Severity and longevity of underlying disease of died patients did not let reliable estimation of morphofunctional renal disorders that occurs with brain tumor. It might be pointed out that 9 out of 30 died patients had proteinuria upon clinics arrival. Those patients were not found to experience chronological kidney pathologies. Such cases might be materials for further studies with immunoluminometricmicroscopy, immunohistochemistry, and molecular genetics application.

P5
MORPHOFUNCTIONAL RENAL DISORDERS THAT OCCUR WITH BRAIN TUMORS
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²International Kazakh-Turkish University of Name K.A. Yassavy, Shymkent City, Kazakhstan

Introduction: Study of changes in kidney that occurs at central nervous system lesion, did not get sufficient attention in clinical medicine, including nephrology. There is a data exists that proteinuria can increase when there are brain diseases, especially when it is subarachnoid hemorrhage, negative emotions, and stress (Arthur M. Fishberg, M.D., 1957). Brain pathology can initiate severe renal failure (Mehran R, Aymong ED, Nikolsky E. 2004). Renal failure at brain disease mechanism is associated with vasoconstriction of renal vessels of central genesis and in foreign literature it is called neurogenic nephropathy (Arthur M. Fishberg, M.D., 1957). The purpose of the study was to reveal morphofunctional kidney disorders that occurs with brain tumors.

Materials and Methods: Material of study was kidney tissue samples taken from 30 patients that died from various brain tumors. Kidney tissue samples were fixed in 10% neutral buffered formalin solution. After traditional procedure histological sections were dyed with hematoxylin, eosin, Van Gieson's and Mason's trichrome, congo-red. Then silver impregnation and PAS reaction were conducted. Histological examinations were done by Axioskop 40, CarlZeiss, Germany microscope, at ’100 and ’400 magnifications.

Results: Patomorphologic tissue changes were found in all 30 cases that accounts for 100%. From there: 23 cases (73.6%) of discirculatory-hypoxic alteration of nephrothelial tubules (acute tubular necrosis), 3 cases (10.0%) of chronical tubular-interstitial nephritis, 2 cases (6.6%) of interstitial nephritis due to sepsis, 1 case (3.3%) of glomerulosclerosis due to arterial hypertension, 1 case (3.3%) of thrombotic microangiopathy.

Conclusions: Severity and longevity of underlying disease of died patients did not let reliable estimation of morphofunctional renal disorders that occurs with brain tumor. It might be pointed out that 9 out of 30 died patients had proteinuria upon clinics arrival. Those patients were not found to experience chronological kidney pathologies. Such cases might be materials for further studies with immunoluminometricmicroscopy, immunohistochemistry, and molecular genetics application.

P6
ACTUAL QUESTIONS SETTING STANDARDS OF DIALYSIS IN SOUTH KAZAKHSTAN
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Introduction: The increase of patients on hemodialysis (HD) dictates the need to improve the provision of specialized assistance. Our aim was to examine the state of HD assistance SKO in the execution order of MoH № 765 from 30.12.2013. “Standard of organization providing nephrology care to the population of the Republic of Kazakhstan”.

Materials and Methods: Presence of HD in southern Kazakhstan in 2006-2008 was 16.7 per million population, which was nearly 10 times lower than in Astana, and almost 3 times lower than in Kazakhstan (40 per 1 million. sat.). The load on HD apparatus was 1.5-2 times higher, 80% hardware required replacement. HD Development, including through public-private partnerships, increased security in the South Kazakhstan region in 2014 - 150 to 1 million pop. Total dialysis centers with subsidiaries -16. Order of the
P7
THE STATUS AND PROSPECTS OF NEPHROLOGY SERVICE IN SOUTH KAZAKHSTAN

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Introduction: South Kazakhstan (SK) is one of the most densely populated areas of the Republic of Kazakhstan. In the area has been an increase in patients with glomerular disease (GD). As throughout the country, primary nephrologists are scarce in SK, which leads to an increase in the number of “unaccounted” patients with chronic renal failure (CRF). Our aim was to study the incidence and structure of nephrology pathology, basic organizational aspects of nephrology service in SK on outpatient level.

Materials and Methods: The data of the automated information system (AIS) “Kidney”, reported data nephrologist clinic bureau.

Results: In 2006, according to the Register of AIS “Kidney” were registered 345 (including 113 children) of patients with glomerular disease, in 2013 - 453 (105 children) for 6 months in 2014 - 473 (children -99). According to nephrologist clinic bureau in 2013 addressed to various glomerular failure 2,965 adult patients. Of those with chronic nephritic syndrome - 1568, diabetic nephropathy - 930, kidney disease in systemic diseases – 316, in endocrine pathology - 140.CRF in 2013 approached 426 patients, and for 6 months in 2014 - 572 patients. According to the AIS “Kidney” in 60% of cases in 2013 was not determined creatinine levels. Among those who have defined creatinine (259 patients), 44% identified different stages of chronic renal failure, 10% - on predialysis stage (67). In South Kazakhstan region in 2013 were registered in patients with diabetes mellitus - 31519 (1165.0 per 100 000); diabetic nephropathy - 2 188 (7%); with hypertension - 41262 (1556.9 per 100 000), 2 months of 2014 - the first time identified 7915 patients with hypertension. In SK there is a rate of 5.25 nephrologist in clinics, of which employed - 3.75 due to the lack of Nephrology. In the area of about 30 nephrologists, more than half of them work in the private sector.

Conclusions: The incidence of GD in SK is much higher than the official data. The incidence of chronic renal failure for the 6 months of 2014 compared with the year 2013 increased by more than 2 times. Number of bids nephrologists does not satisfy the need for them. Need to develop a comprehensive plan for the development of nephrology service with the development of mechanisms of motivation for public sector professionals.

P8
AN EFFICACY OF LEVAMISOLE ADMINISTRATION DURING VACCINATION AGAINST HEPATITIS B IN CHILDREN ON HEMODIALYSIS

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Introduction: The vaccination against hepatitis B (HB) is the critical problem in patients with end-stage renal disease (ESRD) due to increased risk of infection and secondary immune deficiency. Currently, efforts are being made for use of immune stimulating drugs during the active and passive immunization of patients with ESRD. The drug of choice is levamisol, usually used in patients with primary and secondary immune deficiencies.

Materials and Methods: We have analyzed efficacy of levamisol in dose of 1 mg/kg after every dialysis session together with vaccination against hepatitis B in 11 hemodialysis patients with lack of post-vaccination immunity aged 13.7±0.85 years. Vaccination was conducted with doubled dose (20 mcg) in accordance to schedule 0-1-6 months. Comparison group consisted of patients on hemodialysis vaccinated with doubled dose (scheme 0-1-2-6 months).
Results: The combination of vaccination with levamisole is characterized by sufficient serological response in 1 month after vaccination course in comparison with vaccination without immunity stimulation. The titers of anti-HBs antibodies were 987.9±10.1 and 408.6±47, mIU/mL respectively (p<0.001). In the group of patients received levamisole the titers of antibodies were comparable with healthy controls. In group of patients vaccinated without levamisole the progressive decreasing of protective antibodies was noted at 3 years of follow-up to 95.4±21.5 mIU/mL. In group of children treated with levamisole the sufficient and sustained serological response was established with slight decreasing of antibodies’ titers within 3 years of follow-up 842.7±25.9 mIU/mL (p<0.001). In one month the majority of patients treated with levamisole (72.7%) had the sufficient serological response with level of anti-HBs antibodies >1000 mIU/mL and 3 (27.3%) titer of 500-1000 mIU/mL. Sero-conversion was 100% and 92.5% respectively in patients on levamisole and without levamisole within 1 month after vaccination course. In one year the mean titers of antibodies remained on previous level. The number of patients not treated with levamisole with titers of 500-1000 mIU/mL decreased from 7 to 1 (3.7%, p<0.05), and with titers 100-500 mIU/mL increased to 18 (66.7%, p<0.05), 10-100 mIU/mL to 6 (22.2%), the number of children with negative titer was the same (7.4%). In 3 years after vaccination the most of patients treated with levamisole had titers 500-1000 mIU/mL and sero-conversion was 100%. In patients without levamisole administration sero-conversion had the trend to decreasing to 92.6%, 88.8%, and at 3 year of follow-up the significant decreasing was noted 66.7% (p<0.001).

Conclusions: The vaccination against HBV with levamisole improved an immunological response with sufficient protection in all children with ESRD on hemodialysis (100%). In group of children vaccinated without levamisole the sero-protection was insufficient which means an increased risk of HBV infection.

P9
COMPARING THE PATENCY OF PERITONEAL CATHETERS AT PERITONEAL DIALYSIS PATIENTS WITH RESIDUAL RENAL FUNCTION

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Introduction: Residual renal function (RRF) in dialysis patients is clinically important because it is clearly associated with better overall health, well-being, and survival. The most important benefit of peritoneal dialysis relative to hemodialysis is the preservation of residual renal function, which equates to improved survival during the first several years of therapy. Currently available methods for catheter placement are principally classified as: I. Bedside insertion, II. Surgical insertion with open dissection, III. Peritoneoscopic insertion, IV. Laparoscopic insertion. However the literature lacks any studies evaluating the laparoscopic insertion method in relation with its effectiveness in dialysis and either positive or negative effects on residual renal function. In this study we compared the residual renal function and patency of peritoneal dialysis catheters placed using open surgery technique with those of the laparoscopic technique.

Materials and Methods: This study was performed on 101 patients (64 male, 37 female; mean age, 56.73±13.07 years; PD duration, 46.37±23.60 months), followed up in three separate university dialysis centers between years 2004-2015. The study population consisted of patients with chronic renal failure having residual renal function (patients with oliguria/normal urine output [>100 mL/day]) without having any previous renal replacement. Laparoscopic technique consisted the placement of a peritoneal dialysis catheter using the preperitoneal route into the pelvic cavity therapy. All of the patients were followed up by routine laboratory values subsequent to the placement of the peritoneal dialysis catheters on 2nd, 6th, 12th, 24th, 36th and 48th months of the procedure. Residual GFR was measured around two months after CAPD and then six months more. Changes in RRF during the follow-up period [rate of decline of RRF (%)] were calculated as follows:

\[
\text{Rate of decline of RRF (%) } = \frac{(\text{RRF at baseline} - \text{RRF after 6,12,24,36,48 month})}{\text{RRF at baseline}} \times 100
\]

Results: Patients were divided into two groups: open surgery (OS) group (n=42) and Laparoscopic surgery (LS) group (n=59). In the LS group, a prolonged difference rate of decline of RRF (residual-Kt/v (r-kt/V) and urine output) were observed between the 2nd to 24th months of the dialysis (p<0.005). Both of the groups were statistically comparable regarding the routine laboratory values such as creatinine, parathyroid hormone calcium and crp, except the significantly lower value of phosphorus in LS group when compared with OS group (Mean Phosphorus OS group:4.84±1.05 vs LS group:3.96±1.59 p<0.005).

Conclusions: This study shows us that the laparoscopic PD catheter insertion technique is to be preferred over the conventional open surgery technique for containing renal residual function.
P10
REPRODUCTION IN WOMEN WITH CKD
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Introduction: Chronic kidney disease (CKD) is a major public health problem worldwide with increasing prevalence, thus early warning symptoms of kidney disease quite often detected at woman during their reproductive age. It is known that pregnancy in women with CKD even with well preserved function is accompanied by serious problems such as: the frequency of obstetric and perinatal complications and preterm delivery, necessary abdominal cesarean section increased in comparison with the general population, need in newborn intensive care immediately after birth delivery.

Materials and Methods: Different cases related to pregnancies are discussed in this article. This experiment was conducted from 2006 to 2013. The cases are pregnancy before starting hemodialysis treatment, pregnancy of a woman who has been taking hemodialysis treatment since 2000 and pregnancy that occur after kidney transplantation.

Results: According to the generalized data from 1985 to 2007 the women with serum creatinine of 125-180 µmol/L had 5% of perinatal mortality, 25% of permanent loss of kidney function in the postnatal period, n for 20% from the initial and 2% the development frequency of ESRD. For the last 30 years conception frequency increased on patients with a CKD and those who receive renal replacement therapy. Results of such pregnancies improved and the conductance technique of maintaining complex clinical combination was developed. 40% of women (<55 years) on hemodialysis had preserved menstrual periods, but anovular cycles and infertility are noted.

Conclusions: The presence of renal disease signs during pregnancy predisposes poor maternal and fetal outcome and accelerated decline in renal function. The likelihood of a surviving infant resulting from pregnancy in dialysis patients is higher than previously above mentioned case. The pregnancy in women with kidney transplant was successful but rates of preeclampsia, preterm delivery, and cesarean section remain high despite improvements in obstetric, perinatal, and nephrologic care.

P11
LIVER METHABOLIC FUNCTIONS OF PATIENTS WITH SURFACE ANTIGEN-POSITIVE HEPATITIS B ON HAEMODIALYSIS
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Introduction:Hepatitis B (hepatitis B, HBV) remains a serious problem, particularly relevant for patients with end-stage renal disease receiving substitution therapy program hemodialysis (HD).

Materials and Methods: The study included 50 patients aged 45.4 ± 4.1 years with hepatitis B. All patients were on hemodialysis from 2008 to 2009, in a private medical center “Medservice” Baku, on the occasion of end-stage renal failure. Studied patients at admission had positive results of serological markers of hepatitis B (HbsAg and HbcorIgM). In this group of patients were studied indices gammaglutamiltransferazy (GGT) and alkaline phosphatase (ALP) in the blood serum of the liver.

Results: GGT activity decreased by 67.9% (p0 <0.05) in relation to the outcome, but in relation to the control group, 2-GGT activity remained elevated at 51.6% (p1 <0.05), and did not differ from that in the control group-1. By the 6th month of the ALP has become even lower on the outcome of 53.9% (p <0.01), and did not differ from the norm and control group-2. Decrease in these parameters was accompanied by the disappearance of serum HbsAg.

Conclusion: Thus the data obtained in this study indicate a positive impact on hemodialysis cholestasis syndrome in patients with viral hepatitis B, an increase reactivity and improve the overall and liver function during treatment with hemodialysis. All this makes it advisable to further study the mechanisms of positive influence on hemodialysis indicators of liver enzyme with concomitant hepatitis B in clinical practice in this group of patients.
P12
EPIDEMIOLOGICAL AND PATHOGENETICAL CHARACTERISTICS OF INFECTIONS CAUSED WITH HEPATITIS B AND C VIRUSES AMONG UNDERGONE HEMODIALYSIS CHRONIC RENAL FAILURE PATIENTS IN BAKU

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The authors carried out serological and biochemical testing of blood serum of undergone hemodialysis 434 patients with chronic renal failure and constantly living in Baku for determination of hepatitis B and C viral infections spreading and pathogenetical peculiarities of these infections course at such patients.

It was demonstrated that frequency of these infections’ serologic markers detection among above mentioned patients was significantly higher than analogous indexes at healthy inhabitants of Baku. Besides it was shown that at more than 2/3 of patients both infections coursed in pathogenetical variants which were not accompanied with appearance in the blood biochemical signs of liver dysfunction.

P13
RELATIONS AMONG HYPERURICEMIA, INFLAMMATION, OXIDATIVE STRESS AND ARTERIAL STIFFNESS IN RENAL TRANSPLANT RECIPIENTS

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Introduction: Uric acid is the end product of purine metabolism and has well known anti-oxidant effects. Superoxide dismutase (SOD) and malondialdehyde (MDA) are well-known antioxidant enzymes that detoxify highly oxidant compounds as advanced glycation end products (AGE). The aim of this study was to evaluate the relationships between serum uric acid levels, inflammation and oxidative stress parameters accompanied by arterial stiffness in renal transplant recipients.

Materials and Methods: Fifty renal transplant recipients (36 male, mean age: 39.2±11.2 years) with stable allograft function from our renal transplant outpatient clinic were enrolled into the study. All acute cellular and humoral rejections were excluded. According to mean serum uric acid (sUA) levels patients were divided into 2 groups as group 1 (sUA> 6 mg/dL; n: 25) and group 2 (sUA<6 mg/dL; n: 25). All patients were evaluated for their standard clinical (age, gender, duration of hemodialysis, post-transplant time), biochemical parameters (serum uric acid, C-reactive protein [CRP], albumin), serum AGE, MDA, SOD, FGF-23 and Klotho levels were determined by ELISA method. Pulse wave velocity (PWv) was determined from pressure tracing over carotid and femoral arteries using the SphygmoCor system.

Results: Groups were similar in means of clinical (age, gender, duration of transplantation) and biochemical (calcium, phosphorus, parathyroid hormone, sodium, potassium) demographic characteristics. Patients in group 1 had significantly higher CRP (p: 0.031), PWv (p: 0.006), AGE (p: 0.002), FGF-23 (p: 0.001) levels, however significantly lower eGFR (p: 0.024) and MDA levels (p: 0.031). For each 1 mg/dL of increased level of sUA resulted in 0.162 cm/sec of increased level of PWv (p: 0.05, CI: -0.006 – 0.330) and 0.003 pg/mL of FGF-23 (p: 0.05, CI: 0.000- 0.007). In linear regression analysis, serum MDA (p: 0.027) and FGF-23 levels (p: 0.004) were detected as the predictors of PWv.

Conclusions: We concluded that hyperuricemia was correlated with increased levels of CRP, AGE and FGF-23 levels, and decreased levels of eGFR and MDA. Thus reduction in uric acid levels might contribute to improve allograft function and cardiovascular morbidity and mortality in kidney transplant recipients.

P14
IMPACT OF PROTON POMP INHIBITORS ON HYPOMAGNESEMIA AND ARTERIAL STIFFNESS IN RENAL TRANSPLANT RECIPIENTS

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Introduction: Hypomagnesemia predicts cardiovascular morbidity and mortality in the general population and accelerated loss of kidney function in renal transplant recipients (RTRs). Proton pomp inhibitors (PPIs) or H2 receptor blockers (H2RBs) are frequently used agents after RT. Recent studies highlighted the association between hypomagnesemia and PPIs in healthy population and patients ongoing hemodialysis. The aim of this study was to evaluate the effects of PPIs on serum magnesium levels and arterial stiffness in RTRs.
Materials and Methods: We performed a retrospective study of 354 maintenance RTRs (mean age: 38.6 ± 10.7 years) with stable allograft function who had received their transplant at least 36 months previously. All acute cellular and humoral rejections were excluded. According to using stomach-protecting agents (SPAs), patients were divided into three groups: PPIs (Group 1, n: 164), H2RBs (Group 2, n: 96) and control group who don't receive SPAs (Group 3, n: 94). Clinical and laboratory parameters (complete blood count, creatinine, calcium, phosphorus, magnesium, vitamin B12, folic acid, lipid profile) were noted from recorded data. Estimated glomerular filtration rate (eGFR) was calculated by using the MDRD4 equation. Pulse wave velocity (PWv) was determined from pressure tracing over carotid and femoral arteries using the SphygmoCor system.

Results: Groups were similar in means of demographic characteristics (age, gender, duration of dialysis before transplantation) and biochemical parameters as serum calcium, phosphorus, parathyroid hormone, CRP, lipid profile and eGFR levels. Mean serum magnesium levels were significantly lower in group 1, however similar in group 2 and 3 (7.3 ± 0.2 cm/sec, 6.3 ± 0.1cm/sec and 6.2 ± 0.1 cm/sec, respectively). In linear regression analysis; type of SPAs (p: 0.001), serum calcium, phosphorus, parathyroid hormone, CRP, lipid profile and eGFR levels (p: 0.033) were detected as the predictors of PWv. Calcium, phosphorus, parathyroid hormone, CRP, lipid profile and eGFR levels (p: 0.033) were detected as the predictors of eGFR.

Conclusions: We concluded that PPIs inhibit magnesium absorption independent from calcium metabolism in RTRs. Moreover, PPIs leads to increased arterial stiffness and cardiovascular risk in RTRs. Thus physicians should be aware of the side effects of PPIs to scale down the cardiovascular morbidity and mortality.

P15
HYPERURICEMIA TAKES A TOLL IN GRAFT FUNCTION, LEFT VENTRICULAR DIAMETERS AND ARTERIAL STIFFNESS IN RENAL TRANSPLANT RECIPIENTS
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Introduction: Cardiovascular diseases are the leading cause of morbidity and mortality in renal transplant recipients (RTRs). Serum uric acid (UA) levels correlate with many recognized cardiovascular risk factors. The impact of serum UA on outcomes of RTRs remains controversial. The aim of this study was to evaluate the relation between serum UA, graft function and arterial stiffness accompanied by echocardiographic measurements.

Materials and Methods: We performed a cross-sectional observational study of 118 hyperuricemic (serum UA were ≥ 4 mg/dL) maintenance RTRs with stable allograft function at the first year of transplantation. All acute cellular and humoral rejections were excluded. PWv was determined from pressure tracing over carotid and femoral arteries using the SphygmoCor system. We calculated the estimated GFR (eGFR) using the MDRD4 equation. Routine first year transthoracic echocardiographic measurements (ejection fraction [EF], left ventricular end-diastolic diameter [LVDD], left ventricular end systolic diameter [LVSD]) was recorded.

Results: All patients were similar in means of clinical demographic characteristics. Mean serum UA level was 5.7±1.5 mg/dL. A significant positive correlation was found between serum UA and PWv (r: 0.396, p: 0.01), systolic blood pressure (r: 0.312, p: 0.001), LVSD (r: 0.275, p: 0.05), LVDD (r: 0.303, p: 0.01), however an invers correlation was detected between serum UA levels and eGFR (r: -0.530, p: 0.01)). For each 1 mg/dL of increased level of UA resulted in 0.6 cm/sec of increased level of PWv (p: 0.001), 0.078 cm/sec of increased level of PWv (r: 0.001), 0.06 cm/sec of increased level of PWv (p: 0.001), 0.06 cm/sec of increased level of PWv (p: 0.001), 0.06 cm/sec of increased level of PWv (p: 0.001). In linear regression analysis, serum calcium (p: 0.031), magnesium (p: 0.07) and folic acid levels (p: 0.013) were detected as the predictors of PWv.

Conclusions: Present study concluded that hyperuricemia can contribute to cardiovascular morbidity and mortality by vascular damage and deteriorating left ventricular functions together with impairing graft function.

P16
IS HYPERURICEMIA RELATED TO MORNING BLOOD PRESSURE SURGE AND NON-DIPPER HYPERTENSION?
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Introduction: Uric acid is the end product of purine metabolism and a significant predictor of cardiovascular mortality. The term that blood pressure rises before awakening in the morning is called as morning blood pressure surge (MBPS) that is considered to be an independent risk factor for poor cardiovascular outcomes. The aim of this study is to evaluate the association between impact of hyperuricemia on post transplant hypertension determined by office and ambulatory blood pressure monitoring (ABPM), presence of MBPS and non-dipper status and graft function in RTRs.
**Materials and Methods:** One hundred RTRs (mean age 37.3 ± 10.3 years) from our renal transplant outpatient clinic with serum UA levels >4 mg/dL at the first year of transplantation were enrolled into the study. We calculated the estimated GFR (eGFR) using the MDRD4 equation. Office and ambulatory blood pressure monitoring (ABPM) was performed at the first year of transplantation. PWv was determined from pressure tracing over carotid and femoral arteries using the SphygmoCor system.

**Results:** All patients were similar in means of clinical demographic characteristics. Mean serum UA level was 5.3±1.2 mg/dL. A significant positive correlation was found between serum UA and PWv (r: 0.396, p: 0.01), awake systolic blood pressure (r: 0.312, p: 0.001), awake diastolic blood pressure (r: 0.518, p: 0.001) and MBPS (r:0.233, p: 0.019) and a negative correlation with eGFR (r: -0.461, p:0.005). For each 1 mg/dl of increased level of UA resulted in 0.69 cm/sec of increased level of PWv (p: 0.001) and 1.4 mmHg of MBPS (p: 0.03). In subgroup analysis, patients with serum UA>6 mmHg had a higher incidence of non-dipper hypertension than patients with serum UA<6 mmHg (53% and 24%, p: 0.02). In linear regression analysis, PWv (p: 0.01), awake systolic and diastolic blood pressure (p: 0.001) were detected as the predictors of MBPS.

**Conclusions:** We concluded that post-transplant hyperuricemia should be immediately treated to prevent MBPS and non-dipper hypertension related poor cardiovascular outcomes.

**P17**

**POST-TRANSPLANT C-REACTIVE PROTEIN PREDICTS GRAFT FUNCTION IN KIDNEY TRANSPLANT RECIPIENTS**

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**Introduction:** C-reactive protein (CRP) is an acute phase protein that produced by hepatocytes in response to IL-6. High serum levels of CRP are predictive for cardiovascular diseases in patients in ongoing dialysis and even in healthy individuals. Although the outcomes of pre-transplant CRP levels and graft function were shown in the literature, the effects of post-transplant CRP levels on graft function are not well-known. The aim of this study was to evaluate the factors predicting post-transplant CRP levels and to determine the renal and cardiovascular outcomes of pre and post-transplant CRP levels.

**Materials and Methods:** One hundred and fifty renal transplant recipients (113 male, median age was 38.9±10.8 years) were cross-sectionally analyzed. The median follow-up was 32 months. All subjects underwent clinical and laboratory evaluations (serum creatinine, calcium, phosphorus and albumin, estimated glomerular filtration rate (eGFR ), 24 hour urine protein loss, complete blood count). Mean pre-transplant and post-transplant CRP levels were analyzed by the 1st, 3rd,6th, 12th and 24th months of transplantation. Patients were divided into 4 groups according to mean post-transplantation CRP levels: Group 1 (CRP >20 mg/L; n: 13), group 2 (CRP 6-20 mg/L; n: 40), group 3 (fluctuations in CRP levels; range: 6- 48 mg/L, n: 21) and group 4 (CRP <6 mg/L; n: 76). Arterial stiffness was measured by carotid-femoral pulse wave velocity (PWv) by SphygmoCor system.

**Results:** Pre-transplant CRP levels were similar in four groups. Patients in group 3 had significantly lower eGFR (p:0.000), left ventricular systolic function (p:0.035) and higher duration of dialysis before transplantation, PWv, proteinuria and left ventricular mass index (0.004, 0.000, 0.004 and 0.036, respectively) when compared to other three groups. Group 1 patients had significantly higher PWv, proteinuria, left ventricular mass index and lower eGFR values when compared with group 4 (p = .001, .000, .028, .008, respectively). In regression analysis; eGFR (0.002) and PWv (p = .001) were detected as the predictors of post-transplantation CRP levels (p<0.005).

**Conclusions:** Fluctuating and high stable (>20 mg/L) post-transplant CRP levels predicts eGFR, proteinuria, left ventricular mass index and PWv after transplantation. Thus, CRP levels may be a useful marker to anticipate graft survival and cardiovascular morbidity in renal transplant recipients.

**P18**

**POST-TRANSPLANTATION ANEMIA PREDICTS CARDIOVASCULAR MORBIDITY IN KIDNEY TRANSPLANT RECIPIENTS: A SINGLE CENTRE EXPERIENCE**

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**Introduction:** In kidney transplant (KT) recipients, long term graft survival rates are still limited because of cardiovascular events. Anemia is a common complication that contributes to cardiovascular morbidity and mortality. The aim of this study was to investigate the predictive factors of post-transplantation anemia and its effects on renal and cardiovascular outcomes.

**Materials and Methods:** One hundred and fifty (113 male, mean age: 38.9 ± 10.8 years) KT recipients with functioning
grafts were enrolled into the study. All subjects underwent clinical and laboratory evaluations (serum creatinine, calcium, phosphorus, albumin, estimated glomerular filtration rate (eGFR), 24 hour urinary protein loss, complete blood count) and transthoracic echocardiography (TTE) to assess left ventricular (LV) systolic function. Arterial stiffness was measured by carotid-femoral pulse wave velocity (PWv) by SphygmoCor system. Mean hemoglobin levels were analyzed from the 1st, 6th, 12th and 24th months of transplantation. Anemia was defined according to World Health Organization as hemoglobin (Hb)<13 g/dL in men and <12 g/dL in women. Patients were divided into two groups according to presence of anemia; group 1 (patients with anemia; n: 120) and group 2 (normal: 30).

**Results:** Pulse wave velocity values (6.8±1.9 m/sec vs 6.4±1.1 m/sec in group 1 and 2, respectively; p = .002) and left ventricular mass index (LVMI) (252.1±93.7 g/m2 161.2±38.5 g/m2 group 1 and 2 respectively, p = .001) were significantly higher in group 1. eGFR and (64±28.5 m/min vs 77.8±30 m/min in group 1 and 2 respectively, p = .001) left ventricular systolic function (57.2±5.8% vs 77.8±30% in group 1 and 2 respectively, p < .005) was significantly lower in group 1. In regression analysis LV systolic function and LVMI were the predictors of post-transplantation hemoglobin levels (p = .001 and .000, respectively).

**Conclusions:** We concluded that post-transplantation anemia contributes to cardiovascular morbidity by deteriorating left ventricular function and increasing PWv and associated with poor prognosis for graft survival.

**P19**

**CALCULATIONS OF PERCENTAGE CAPTURE THE TECHNEMEC99TcM WITH AMENDMENT COEFFICIENT TO DECAY 99TcM**

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**Introduction:** Assessment of renal function after exposed small radiation dose (SRD) by statistical scintigraphy (SS) method with introduction amendment coefficient to decay of 99Tc at calculation the percentage capture of technemec99Tc. We improved a formula calculation with introduction the amendment coefficient to decay of 99Tc: $P1 = \frac{100 \times (A-B) \times e^{0.693 \times t/T}}{C} \times \frac{1.73}{S}$, where $P1$ – a capture percent of PC by kidney with take into account amendment coefficient to decay of 99Tc; A – an impulses is accounted from renal area (impulse at minute); B – an impulses is accounted from background area (imp./min.); C – an activity difference at imp./min. from a syringe until and a syringe after intravenous (iv.) injection of PC; 1.73 – standard body surface area; S – a patient body surface area, which is examined, and determined with the Growth Weight Nomogram for estimate of body surface area; $e^{0.693 \times t/T}$ – amendment coefficient to decay on 99Tc, where is t – time from injection moment of technemec99Tcm until to research start; T- half-life period of 99Tc.

**Results:** Standard accounting method the percentage capture of Tc99m showed significant difference of accumulation Tc99m in renal parenchyma at patients not underwent SRD. The proportion of 21 patients had exposed SDR with low isotope accumulation is 0.83, and patients arm not underwent SRD is 0.62. Assessment of difference between both proportions were defined $P = (-0.21) \pm 0.2$; CI 95% is $[-0.41; -0.01]$; by Fisher’s method $Z = -2.178$, p-value <0.05.

Proportion of patients after exposed with coefficient to decay of Tc99m is 0.38 and at patient were not exposed SRD is 0.52. Assessment of difference between proportions has showed: $P = -0.14 \pm 1.96$; CI 95% is $[-0.336; 0.056]$; by Fisher’s method $Z = 1.324$, p-value >0.05.

**Conclusions:** The statistical scintigraphy is a safe method for assessing kidney function. Introduction of amendment to decay of 99Tc to allow of false positive results on 11.9% to assess of renal function at patients with arterial hypertension and kidney dysfunctions.
P20
THE STRUCTURE OF LOWER THIRD URETER OF GRAFT – TRANSPLANT URETEROHYDRONEPHROSIS: A CLINICAL CASE
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Introduction: Renal transplantation is unquestionably the best way to achieve medical and social rehabilitation in patients with terminal renal failure. Currently renal transplantation actively pursued in Kazakhstan, the number of transplanted patients is increasing every year. When managing such patients in the early and late post-transplant periods can cause various complications, including urology. In this study we describe a clinical case after related donor kidney allotransplantation (July 2014, Astana) complicated by the stricture of lower third ureter graft (January, 2015).

Case Report: Patient G., 27 years old. From November 2012 arterial pressure arises. From January 2013 the patient is observed domiciliary by nephrologist. In Department of Nephrology Chronic Glomerulonephritis is diagnosed, Hypertensive Option with the outcome in Terminal Chronic Renal Failure, latent form, complication of Symptomatic Hypertension (Biopsy was not taken). Hypertensive angiotherapy, cancerous. Renal anemia, average severity uremia. In March 2013 taken to program hemodialysis for 12 hours a week. As planned 01.07.2014 related kidney transplantation was conducted (Astana). Post operative period was smooth. After immunosuppressive therapy the patient was released under domiciliary nephrologist observation. The concentration of tacrolimus in blood 6.0gn/mL. When planned hospitalization in Department of Nephrology in October 2014 secondary polycythemia happened (hemoglobin – 193g/l, erythrocytes – 6.26*10, 12/L, hematocrit – 55.1%). Nitrogenous waste products increased (Creatinine – 189mkmmol, urea – 10.6mmol/L) Urinalysis – without particular properties. Ultrasound examination - hydronephrosis graft. The expansion of the ureter. Formation in ureter area (Urinoma?). The concentration of tacrolimus in blood 10.6mmol/L. Urine analysis – without particular properties. Ultrasound examination - hydronephrosis graft. The expansion of the ureter. Formation in ureter area (Urinoma?). The concentration of tacrolimus in blood 10.6mmol/L. Urine analysis – without particular properties. Ultrasound examination - hydronephrosis graft. The expansion of the ureter. Formation in ureter area (Urinoma?). The concentration of tacrolimus in blood 10.6mmol/L, urea – 8.2 mmol/L. Platelets – 136*10 9/L. The concentration of tacrolimus in blood – 6.0 gn/mL.

P21
THE EFFECTS OF THE PERITONEAL DIALYSIS CATHETER REPLACEMENT METHODS: THE OPEN VERSUS THE LAPAROSCOPIC PRE-PERITONEAL TUNNELING APPROACH
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Introduction: The key to achieve adequate peritoneal dialysis, a functioning catheter should enable unrestricted inflow and outflow of the dialysate liquid from the peritoneal cavity with an intact peritoneal membrane. Despite its advantages, complications, such as outflow obstruction, catheter-related infection and dialysate leak, still remain problematic. Various laparoscopic techniques for catheter placement have been investigated. The main purpose of this study was to compare the laparoscopic and open surgical peritoneal dialysis (PD) catheter insertion techniques in a retrospective manner according to catheter survival and complications and the safety of both techniques.

Materials and Methods: The study included end stage renal disease patients in our hospital in whom a PD catheter was replaced between 2007 and 2014. Sixty-nine patients were enrolled into the study. Patients were divided into two groups: the open technique (OT) group and the laparoscopic pre-peritoneal tunneling approach (LA) group. Continuous ambulatory peritoneal dialysis catheters (CAPD) were replaced into 35 patients via LA and 34 via OT. Extracted data included patient demographics, operative data, catheter related complications and follow-up data.

Results: All of the CAPD related complications; peritonitis, malposition, outflow obstruction, and leakage were lower in the LA group. We found that, in this study, the LA group patients had better survival rates compared with the OT group, especially the long-term survivals. All of the CAPD related complications, such as peritonitis, malposition, outflow obstruction, and leakage were lower in the LA group. However, the peritonitis, malposition and groin hernia rates were also statistically significantly lower in the LA group.
Conclusions: According to our results, when compared with the published data, we recommend laparoscopic CAPD catheter replacement with a pre-peritoneal tunneling technique. The technique is safe and offers a better outcome.

P22
THE OUTCOME OF KIDNEY TRANSPLANTS WITH MULTIPLE RENAL ARTERIES

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Introduction: The use of grafts with multiple renal arteries has been considered a relative contraindication because of the increased incidence of vascular and urologic complications. For these reasons, many transplant centers restrict laparoscopic live donor nephrectomy. The objective of our study was to find the differences in the outcome and complications in patients undergoing kidney transplantation with one single artery or with multiple arteries.

Materials and Methods: We reviewed the records of 106 adult kidney transplants done consecutively at our institution. 19 patients (18 cases with 2 arteries, 1 case with 3 arteries) had grafts with multiple renal arteries. We analyzed the incidence of post-transplant hypertension, vascular and urologic complications, mean creatinine levels, patient and graft survival. In 13 cases reconstruction was done as conjoined anastomosis between two arteries side-to-side, and in 3 cases as end-to-side anastomosis of smaller arteries to larger arteries. Multiple anastomoses were performed in 3 cases (2 cases end-to-end to the hypogastric; 1 case with 3 arteries).

Results: We found no significant differences among the two groups for the following variables: post-transplant hypertension, acute tubular necrosis, acute rejection, creatinine levels, early vascular and urologic complications, and graft and patient survival.

Conclusions: As many other authors, we do believe that the presence of multiple renal arteries in kidney grafts should not be considered as a predictive factor of transplantation failure.
metachronous metastasis in a single kidney. It means once in 25.1 months is required from surgeons to decide the question whether a kidney transplant.

Conclusions: The situation described in patients one year after radical surgical treatment of RCC demonstrates a persistent decrease in glomerular filtration rate, signs of renal failure secondary and talks about the need to address the issue of donor kidney transplantation for the patients. That is about 20% of radically operated on for RCC patients potentially in need of a donor for kidney transplantation. This study conclusively proves the need for the development of transplantation and the relevance of this area of medicine for cancer patients in the Republic of Kazakhstan. Therefore, the authors at the Department of Oncology are planning a simulation experiment to examine the donor kidney allograft patients re cancer only kidneys.

Table. The Variability of Surgical Interventions Regarding RCC

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<td>Nephrectomy</td>
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<td>Nephrectomy + LD2</td>
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<td>Combined nephrectomy</td>
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P24
PREVALENCE AND CLINICAL COURSE OF FIBROMYALGIA SYNDROME IN RENAL TRANSPLANT RECIPIENTS

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Introduction: Fibromyalgia syndrome (FMS) is a multisystemic disorder characterized by chronic, generalized myo-skeletal pain. Besides chronic pain other co-morbidities such as fatigue, sleep disorders, malfunction, depression, anxiety and cognitive dysfunctions could also be seen. The prevalence of FMS is approximately 0.2-5.8%. We could not find any data related with the prevalence and clinical course of FMS in renal transplant recipients.

Materials and Methods: We aimed to find out the prevalence and related factors with FMS in renal transplant recipients. One hundred and twenty-eight end stage renal disease patients who had renal transplant during January 1998-december 2013 at University of Başkent Faculty of Medicine Ankara Hospital enrolled in the study. Inclusion criteria included patients with serum creatinin levels<2.5 mg/dL, who do not have osteoporosis, not considered as rejection period, with normal levels of serum CRP and sedimentation levels and patients on regular controls.

FMS was diagnosed according to ACR 1990 criteria. A subgroup of patients who did not fulfill the ACR criteria but also could not be thought as normal subjects were called “probable FMS”.

Results: According to these criteria, 13 and 7 of 128 patients were diagnosed as having FMS and probable FMS, respectively. All patients diagnosed with FMS were female, had significantly higher levels of malaise, irritable bowel syndrome, sleep disorders, depression with a frequency of 46% and on antidepressant medications with a frequency of 30%. However swelling of joints, paresthesia and restless leg syndrome were seen in similar fashion with normal controls.

Conclusions: In our study we have found that “Fibromyalgia Impact Questionnaire-FIQ” scores were significantly higher at FMS and probable FMS patients (p<0.001) and we have noticed that as FIQ scores increases the frequency of FMS diagnosis also increased. This data shows as that FIQ score could be an independent risk factor at diagnosing FMS. In conclusion, we have noticed a prevalence of 10.15% FMS patients at 128 renal transplant recipients which is at least two times a higher value than people with normal renal function. We can mention as high as 15.6% FMS prevalence at 128 renal transplant recipients when we consider adding patients with diagnosis of probable FMS. Possible explanations for these results could be: using multiple drugs, frequent visits at hospital for other reasons such as infections or rejection, fear of losing the graft, the hard period of hemodialysis and transplantation that precipitates psychosomatic disorders at patients, lower pain thresholds triggered by chronic and serious problematic co-morbid illnesses.

P25
USE OF BIOLOGICAL PROSTHESIS IN A PATIENT WITH KIDNEY AND PANCREAS TRANSPLANT AND A GIANT INCISIONAL HERNIA: CASE REPORT

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Introduction: The use of synthetic mesh in transplant patients is controversial. Recent studies showed that biological prostheses had a greater ability to integrate into tissues, resist bacterial colonization, and reduce cytotoxic or allergic reactions, and provided similar functional results, compared with synthetic prostheses. Biological prostheses did not require any reduction or discontinuation of immunosuppressive therapy. We present the case of a kidney
and pancreas transplant recipient who had a giant incisional hernia that was treated successfully with a biological prosthesis.

**Case Report:** A 40-year-old male kidney and pancreas transplant recipient was admitted to our hospital with a giant incisional hernia, 2 years after transplant. The defect on the abdominal wall was 40×30 cm. We used 2 biological prostheses (40×20 cm and, 30×20 cm) to close the abdominal wall. The patient was discharged on postoperative day 5 without complications. An abdominal magnetic resonance imaging scan showed complete integrity of the biological prostheses at 1 year after surgery.

**Conclusions:** Transplant recipients have higher risks with use of synthetic prostheses because of being immunosuppressed, compared with other patients. Recent studies showed that biological prostheses provided similar functional results without complications compared with synthetic prostheses. These prostheses are versatile and do not require any changes in immunosuppressive therapy. Therefore, they seem to be a better option than synthetic prostheses. In our opinion, biological prostheses are more safe, effective, and reliable than synthetic prostheses, especially for large incisional hernias in transplant recipients. We believe that further larger studies can support our opinion.

![Figure 1. Fascial Closure with Biological Prosthesis](image1)

**Figure 1.** Fascial Closure with Biological Prosthesis

**Figure 2.** Abdominal Magnetic Resonance Imaging Scan

### P26

**EFFECT OF CYTOCHROME P450 3A5 GENETIC POLYMORPHISM ON TACROLIMUS DOSES AND CONCENTRATION**

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**Introduction:** Tacrolimus pharmacokinetic characteristics vary greatly among individuals. Tacrolimus is a substrate of cytochrome p450 (CYP), of subfamily CYP3A. CYP3A activity is the sum of the activities of the family of CYP3A genes, including CYP3A5. Subjects with the CYP3A5*3/*3 genotype express large amounts of CYP3A5. Heterozygotes (genotype CYP3A5*1/*3) also express the enzyme. We postulated that CYP3A5 polymorphism is associated with tacrolimus pharmacokinetic variations.

**Materials and Methods:** CYP3A5 genotype was evaluated in 41 renal transplant recipients and correlated with the daily tacrolimus dose and concentration-to-dose ratio.

**Results:** The frequency of the homozygous CYP3A5*1 genotype (CYP3A5*3/*3) was 9.75%, and 90.25% of subjects were heterozygous (CYP3A5*1/*3). The mean doses required to obtain the targeted concentration-to-dose ratio were significantly lower in patients with the CYP3A5*3/*3 genotype.

**Conclusions:** Determination of CYP3A5 genotype is predictive of the dose of tacrolimus in renal transplant recipients and may help to determine the initial daily dose needed by individual patients for adequate immunosuppression without excess nephrotoxicity.

### P27

**DIFFUSION-WEIGHTED MR IMAGING OF LIVING RENAL ALLOGRAFT TRANSPLANTATION: INITIAL EXPERIENCE**

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**Introduction:** Diffusion-weighted (DW) magnetic resonance (MR) imaging is a new imaging technique for the evaluation of the renal transplantation. The purpose of this study, to determine whether DW MR imaging in living renal allograft donation allows monitoring of changes in
the transplanted kidney before and after transplantation in donor and recipient, respectively, and whether DW MR parameters are correlated in the same kidney before and after transplantation. The normal function of the allograft kidneys is to determine the threshold value of ADC.

Materials and Methods: Between September 2013 and February 2014, fourteen healthy kidney donors were prospectively included in this study. DW MR imaging sequence was performed in axial orientation by using six b values (0, 200, 400, 600, 800, 1000 sec/mm(2)) in donors (group 2) before donation and recipients at day 30 after donation (group 1). Total apparent diffusion coefficient (ADC) values were determined in upper cortex (a) and medulla (b). The surface area of ROI was 10mm². Correlations were tested with independent t test.

Results: Group 1 was included 14 patients whose mean ADC values for upper cortex (a) and upper medullas (b) were 1707.2x10-6 mm²/sec±135.7 and 1627.7x10-6 mm²/sec±122 prospectively. Group 2 was included 14 patients and their mean ADC values for a and b were 1539.7x10-6 mm²/sec±106.0 and 1445x10-6 mm²/sec±121 prospectively. ADC values 30 days after donation from cortex and medulla in allografts in recipients increased from in same kidney of donors (p < 0.01).

Conclusions: In our study we observed that ADC values cortex and medulla from transplanted kidneys were higher than same kidney of donors. The normal function of the allograft kidneys is to determine the threshold value of ADC. The aim of DWI is to distinguish early between acute graft rejection, acute tubular necrosis, delayed graft function after transplantation and to identify causes of long-term renal function impairment. However, its potential use encourages further improvements of acquisition and conducting research in larger populations.

P28
IS IT RATIONAL TO DELAY RENAL TRANSPLANTATION AFTER RADICAL PROSTATECTOMY FOR LOW-RISK PROSTATE CANCER?
A CASE REPORT
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Introduction: A two to five year disease free survival is needed for most of the cancers before kidney transplantation. Unfortunately this recommendation brings a higher risk of dying on dialysis than as a result of prostate cancer for renal transplant candidates with prostate cancer. Here we present you a kidney recipient who underwent renal transplantation six months after radical prostatectomy for low-risk prostate cancer.

Case report: A 63-year-old male patient with chronic renal failure evaluated for living related kidney transplantation and prostate cancer was revealed with a transrectal ultrasound guided prostate biopsy (Gleason score 2 + 3) after detecting serum prostate specific antigen level of 4 ng/mL. The patient underwent a radical prostatectomy with pelvic lymph node dissection and a Gleason 3 + 3 prostate adenocarcinoma was revealed with negative pelvic lymph nodes on final pathologic examination. His calculated progression-free probability at 5 year after surgery from the postoperative nomogram was 99%. He received right living donor kidney transplantation six months after radical prostatectomy from his brother and there is no evidence of prostate cancer recurrence 18 months after the transplantation.

Conclusions: The likelihood of recurrence is very low during the first five year after radical prostatectomy for low-risk prostate cancer. Candidates for renal transplantation with organ confined prostate cancer should be immediately considered for transplantation after radical prostatectomy instead of waiting with the risk of dying on dialysis during this five year period.

P29
ULTRASOUND ELASTOGRAPHY FINDINGS OF RENAL TRANSPLANTS: INITIAL EXPERIENCE
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Introduction: Ultrasound (US) elastography is a quick and noninvasive imaging method that visualizes relative difference in tissue hardness by evaluating changes in local strain in response to external stres. Kidney elasticity measurements with ultrasound should be performed with a quantitative technique, such as Shearwave techniques. This study aims to evaluate its efficacy as a follow-up imaging modality for kidney transplants.

Materials and Methods: Between September 2013 and January 2014, clinical and laboratory functions as a normal seventeen patients were included in this study. Shear wave US elastography examination was performed in upper and lower pole cortex following kidney transplantation in first, fifth and thirtieth days postoperatively. Elasticity values acquired in upper and lower poles were compared using one-way ANOVA test for repeated measurements.

Results: 17 patients were prospectively obtained from the upper pole of the elasticity values mean 4.64± 0.7kPa for
first day, 4.2 ±1.1 kPa for fifth day and 4.5± 0.9 kPa on the 30th day. 17 patients were prospectively obtained from the lower pole of elasticity values mean 4.59± 0.7kPa for the 1st day, an average of 4.3± 0.7 kPa for fifth day and 3.6± 0.9kPa for 30th day. There is no statistically significant difference between the upper pole and the average elasticity in the pairwise comparisons between the tests. Thus the average of the three measured values are given, though not significant (p>0.05). Pairwise comparisons between the lower pole on the test, there was a significant difference between the fifth and thirtieth day average of the first and thirtieth. Descriptive statistics are examined it is seen that when the value decreases between the thirtieth day of days between the first and fifth thirtieth day (p> 0.01).

Conclusions: The elasticity values for the lower poles of the clinical and laboratory functions as a normal transplant kidney showed a statistically significant decrease in the fifth and thirtieth days postoperatively. This modality aims to evaluate its efficacy as a follow-up imaging for kidney transplants. However, its potential use encourages further improvements of research in larger populations. This method has potential monitoring utility, although assessment of clinical relevance is needed.

P30
CORRELATION OF REDUCTION OF BONE MINERAL DENSITY (BMD) WITH CALCIUM, VITAMIN D AND PTH LEVELS IN RENAL TRANSPLANT RECIPIENTS

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Introduction: Reduction in BMD at the vertebral column and at the femoral neck usually occurs in renal transplant recipients during the first months after kidney transplantation. Sometimes it can be persistent in the long term in some cases. The etiology is multifactorial and persistent hyperparathyroidism, pre-existing renal osteodystrophy, immunosuppressive treatment and vitamin D deficiency are the etiological factors. The aim of this study is to investigate the role of PTH, vitamin D and Ca levels in BMD reduction in renal transplant recipients.

Materials and Methods: 27 patients (17 male and 10 female) who underwent renal transplantation in our hospital included in this study. Mean age was 42±12.7 (18-64). The patients with higher creatinine levels more than 2 mg/dl were excluded. Mean follow up was 9±9.5 (1-38 months). Mean pre-transplant hemodialysis duration was 20±32.1 (0-121). There were no parathyroid surgery in patients but two of them had a previous total thyroidectomy. The immunosuppressive treatment was based upon induction therapy with anti-thymocyte globulin (ATG), steroids, calcineurin inhibitors and mycophenolate mofetil. Osteopenia was defined for T score between -1 and -2.5. Osteoporosis was defined for T score more than -2.5. PTH level higher than 150 pg/mL was considered to define hyperparathyroidism. Calcium (Ca) levels more than 10.5 mg/dL is considered as hypercalcemia and Vitamin D levels lesser than 8.8 ng/mL is considered as vitamin D deficiency.

Results: Mean T score was -1.35±1.03 (range between 0 and -5.1) at the femur neck and -1.23±1.3 (range between 1.6 and -3) at the vertebral column. Mean calcium level was 9.65±0.7 mg/dL (8.2-11.9), mean PTH level was 144.41±188.51 pg/mL (48-1065) and mean vitamin D level was 13.39±6.06 ng/mL (4.4-25.8) respectively. Only three (11.1%) patients had higher calcium levels. Only four (14.8%) patients had lesser vitamin D levels. Osteoporosis and osteopenia were respectively found at the femur neck in 3.7% and 70.37% of patients. 25.92% of patients had normal BMD at the femur neck. 30% of patients with osteoporosis/osteopenia at the femur neck had PTH>150 pg/ml and 14.28% of patients with normal BMD had PTH>150 pg/ml (p>0.05). Osteoporosis and osteopenia were respectively found at the vertebral column in 22.22% and 40.74% of patients. 37.03% of patients had normal BMD at the vertebral column. 35.29% of patients with osteoporosis/osteopenia at the vertebral column had PTH>150 pg/ml and 10% of patients with normal BMD had PTH>150 pg/ml (p>0.05). 75% of patients with vitamin D deficiency had osteoporosis/osteopenia. 15% of patients with osteoporosis/osteopenia at the femur neck and 17.64% of patients with osteoporosis/osteopenia at the vertebral column had vitamin D deficiency.

Conclusions: Higher PTH levels were seen in the osteoporosis/osteopenia group but there were no significant differences in the levels of PTH between patients with osteopenia/osteoporosis and patients with normal BMD. Not also hyperparathyroidism but also low levels of PTH are associated with reduced BMD.

P31
MULTIPLE BRAIN ABSCESSES DUE TO PHIALEMONIUM SPP. IN A RENAL TRANSPLANT RECIPIENT: THE FIRST CASE REPORT IN THE LITERATURE

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Introduction: Fungal brain abscess is a rare but serious complication in transplant recipients. Phialemonium spp. infections are rare causes of invasive mold infections.
Mycotic keratitis, invasive fungal sinusitis, endoftalinitis and fungemia with \textit{Phialemonium} spp. were reported in the literature. Here we present the first case of a renal recipient with multiple brain abscesses caused by \textit{Phialemonium} spp.

**Case report:** A 51 year-old female kidney recipient admitted to the hospital due to unknown etiology of pneumonia and treated with empiric intravenous antibiotics and discharged from the hospital on the 10th day uneventfully. Five days later she readmitted to the hospital with fewer, serebral palsy and speech disorder. She was undergone living related renal transplantation 7 months prior to admission. A cranial computed tomography scan (CT) and magnetic resonance imaging (MRI) was performed for a possible cerebrovascular pathology. CT and MRI showed multiple brain abscesses located at left parietal, frontal and occipital lobes, right parietal, occipital lobes, right basal ganglia and left cerebellum (Figures 1 and 2). The patient received meropenem, linezolid, trimethoprim-sulfamethoxazole and ambisone against probable pathogenic agents with declining immunosupression. We identified \textit{Phialemonium} spp in cerebrospinal fluid culture. The patient received Voriconazole 200 mg twice daily. We did not able to drain the lesions due to lack of capsula formation. The patient was died on 30th day of antifungal therapy.

**Conclusions:** \textit{Phialemonium} spp are rare causes of fungal infections which are associated with a high mortality risk in immunocompromised patients. To our knowledge this is the first case report in the literature describing multiple brain abscesses due to \textit{Phialemonium} spp, in transplant population. We want to alert clinicians about these rare opportunistic fungi in the differential diagnosis of brain abscess and recommend performing bronchoscopy and bronchoalveolar lavage to transplant patients when they admitted with pneumonia in order to exclude fungal infections.

**Figure 1:** (A) Axial FLAIR Brain MRI shows abscesses in bilateral cerebral hemisphere with central zone of heterogeneous high signal surrounded by incomplete rim, as well as more peripheral poorly defined zone of high signal representing edema. (B) Brain CT shows abscess in right frontal lobe, intraparenchymal hematoma in left temporal lobe and subarachnoid hemorrhage.

**Figure 2:** Microscopic view of \textit{Phialemonium} spp. (x40 Lactophenol cotton blue strain)

**P32**

**EVALUATION OF TRANSPLANTED KIDNEYS WITH DIFFUSION-WEIGHTED MR IMAGING: INITIAL EXPERIENCE**

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**Introduction:** The aim of this study is to evaluate feasibility of diffusion-weighted (DW) magnetic resonance (MR) imaging in renal allograft recipients for functional assessment of transplanted kidneys as compared with these features in healthy volunteers with native kidneys.

**Materials and Methods:** Twenty nine renal transplant recipients with a stable graft function and 18 healthy volunteers were underwent DW MR imaging. Relationships between ADC and allograft function, determined by the estimated glomerular filtration rate (group A1; eGFR>70 mL/min/1.73 m2 and group A2; eGFR<70 mL/min/1.73 m2) investigated in renal transplant recipients and ADC values of renal transplant recipients (group A) and healthy volunteers (group B) were compared by student t test.

**Results:** Group A was included 29 patients whose mean eGFR was 74.2±25 (38.8-134.3) mL/min/1.73 m2. Mean ADC values for upper cortex (UC), upper medulla (UM), lower cortex (LC) and lower medulla (LM) were 1721±10-6 mm2/sec±197, 1649±10-6 mm2/sec±177, 1670±10-6 mm2/sec±139 and 1579±10-6 mm2/sec±154 respectively. Group B was included 18 healthy volunteers and their mean ADC values for UC, UM, LC and LM were 1501±10-6 mm2/sec±120, 1392±10-6 mm2/sec±127, 1539±10-6 mm2/sec±141 and 1445±10-6 mm2/sec±121 respectively. Group A1 was included 15 patients whose mean eGFR was 93±19.7 (71.8-134.3) mL/min/1.73 m2. Mean ADC values for UC, UM, LC and LM were 1780±10-6 mm2/sec±183, 1712±10-6 mm2/sec±143, 1696±10-6 mm2/sec±143 and 1605±10-6 mm2/sec±170 respectively. Group A2 was included 14 patients whose mean eGFR was 55.5±9.1 (38.8-69.7) mL/min/1.73 m2. Mean ADC values for UC, UM, LC and LM were 1659±10-6 mm2/sec±200, 1581±10-6 mm2/sec±189, 1641±10-6 mm2/sec±134 and 1550±10-6 mm2/sec±133 respectively. ADC values were statistically higher than healthy volunteers.
in group A compared with the group B (p<0.05) whereas there were no significant differences between A1 and A2 groups (p>0.05).

**Conclusions:** In our study we observed that ADC values of transplanted kidneys were higher than native kidneys.

**Figure 1:** DW-MRI ADC Map Image in Coronary Plain

**Figure 2:** DW-MRI b800 Image in Coronary Plain

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**P33**

**MULTIDISCIPLINARY APPROACH - THE KEY TO SUCCESS IN KIDNEY TRANSPLANTATION**

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**Introduction:** Composition and functions of the multidisciplinary team (MDT) in the kidney transplantation are defined on p. 70 Chapter 5 MoH of Kazakhstan order number 765 from 30.12.2013 “Standard of organization providing nephrology care to the population of the Republic of Kazakhstan.” The purpose of the study was to evaluate the results of renal transplantation in Shymkent City Hospital ambulance in the presence of MDT.

**Materials and Methods:** Patient charts underwent surgery kidney transplantation from a living related donor within the master classes (South Korea, Belarus), led by Dr. Pak Hwang To and Professor Rummo - only 33 (Shymkent City Hospital for emergency care).

**Results:** All patients and potential donors before surgery were examined according to the approved protocol. The selection was made according to standard criteria. Age recipients of kidney donors ranged from 21 to 53 years. Hemodialysis received from 6 months to 4 year. All patients marked anemia of moderate severity. Kidney weight was from 135 to 252 g. All transplanted kidney began to secrete urine immediately after turning them into the bloodstream of the recipient, recipients of daily urine output in the postoperative period was from 3800 ml to 12,000 ml.

**Conclusions:** A multidisciplinary approach allows us to optimize the processes of diagnosis and treatment promptly and efficiently in order to take vital decisions, which is a necessary condition for improving the results of renal transplantation.

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**P34**

**SANDIMMUN NEORAL EFFICIENCY AFTER KIDNEY TRANSPLANTATION**

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**Introduction:** The purpose of this study was to collation of data research on Sandimmun Neoral C2 monitoring, as well as to investigate the clinical efficacy of Sandimmun Neoral in the post-transplant period in patients of South Kazakhstan region.

**Material and Methods:** Retrospectively reviewed the records of 27 patients after kidney transplantation, including 20 men and 7 women, aged 15 to 46 years (mid age 34.6 years). Indication for kidney transplantation was end-stage renal failure (TCRF), the causes of which were in 24 patients with chronic glomerulonephritis in 1 - chronic pyelonephritis, 1 - hypoplasia of both
Hyperuricemia is associated with an increased risk of renal failure in general population. Approximately 70% of serum uric acid is excreted through the kidneys, suggesting that an elevated serum uric acid level may resemble deterioration of the glomerular filtration rate (GFR) and kidney disease. The association of serum uric acid (UA) levels with renal transplant donor outcomes is uncertain.

Methods: Between January 2011 and December 2014, seventy four adult renal transplant donors (39 female and 35 male with mean age:50.26±9.79 years) were assessed retrospectively comparing laboratory results at the pretransplant period and 6th month after transplantation. We studied renal transplant donor characteristics according to baseline and follow-up period.

Results: We found a significant correlation between pre-transplant serum uric acid and post-transplant 6th month serum creatinine levels (p<0.0001 rho:0.598). Mean uric acid level was 5.02±1.35 mg/dL and mean creatinine level was 0.74±0.11 mg/dL at the pre-transplant period whereas mean creatinine level was 1.07±0.23 mg/dL at the postoperative 6th month. Multivariate analysis showed us that pretransplant donor uric acid level is the best method in pretransplant evaluation for postoperative outcomes of donor kidney function. Uric acid of 5.15 was the equilibrium point (sensitivity 94.4% and specificity 79.4%).

Conclusions: Pretransplant serum uric acid level can give an important information for postoperative donor renal functions.

Influence of Allograft Weight to Recipient Weight Ratio on Outcome of Living Renal Transplantation

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Introduction: Several studies have measured allograft weight (AW) and investigated recipient parameters related to it. We investigated the impact of the ratio between allograft weight in grams and recipient weight (RW) in
kilograms (AW/RW) on creatinine levels during the postoperative first year.

**Materials and Methods:** We evaluated 60 living renal transplant recipients (36 male, 24 female; mean age: 43.87±14.53 years) between years from 2012 to 2014 and collected their demographics, allograft weights, recipient weights and postoperative creatinine levels. Data about kidney weight were obtained through kidney measurement using an electronic machine at the moment of transplantation. Creatinine levels at the postoperative 3rd, 7th, 14th, 21st days and 1st, 3rd, 6th, 9th, 12th months were evaluated. Humoral and cellular rejections were accepted as exclusion criteria.

**Results:** The mean kidney weight was 176.77 ± 36.01 grams and the mean recipient weight was 69.54 ± 12.88 kilograms. Mean AW/RW was 2.61 ± 0.73 gram/kilograms. We found statistically significant correlation between AW/RW ratio and postoperative creatinine levels (P < 0.05). Detailed data were shown in the table 1.

**Conclusions:** The allograft weight/recipient weight ratio significantly influenced the creatinine levels during the postoperative first year after renal transplantation.

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**P37**  
**BILATERAL STAGHORN CALCULUS PYONEPHROSIS AND SEPSIS IN-PATIENT WITH TRANSPLANTED KIDNEY**  
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**Introduction:** Hydronephrosis, ureteral reflux, polycystic kidneys, severe proteinuria, serious hypertension, persistent infection as the result of calculi, renal adenocarcinoma are indications for bilateral or unilateral nephrectomy in patient before kidney transplantation. Bilateral staghorn calculus is one of main reason terminal renal insufficiency. In nephrolithiasis except of small stones, which may eliminated by extracorporeal lithotripsy usually perform nephrectomy before renal transplantation. Otherwise possibility of development of pyonephrosis and urosepsis after renal transplantation in immunosuppressed patients is very high.

**Materials and Methods:** In this study was discussed patient with bilateral relapsed coral stone of kidney complicated end stage renal failure and developed pyonephrosis, perinephric abscess, urosepsis 1.5 year after living kidney transplantation. Patient 52 years old admitted to clinic with high temperature (39 - 40°C) continued 15 day, severe lumbar pain, weakness, abscess in right perinephric tissue.

**Results:** In anamnesis morbi open surgery for renal stone bilaterally 12 years ago, 2 years ago end stage renal disease and 1.5 year living kidney transplantation. Renal transplantation surgery and nearly postoperative period observed any complications, graft function was sufficiently. Patient received triple immunosuppresssive therapy: prednisolone, azathioprine and cyclosporine. On a plain film of the abdomen there is radiopaque staghorn nephrolitiasis bilaterally, transplanted kidney is stone free (Figure 1). Blood analysis: white blood cell 9.4 x 109/L, sedimentation 50 mm/hour, creatinin 79 mkmol/L. Firstly was performed right nephrectomy and excision of perinephric tissue with flank incision. Size of explanted kidney was 27 x 18 x 17 cm. In postoperative period the general condition of the patient improved, temperature became subfebrile. After 2 month performed left nephrectomy, then the temperature dropped to normal. The patient was under observation for 2 years with normal renal graft function.

In the early years of transplantation bilateral nephrectomy was first step in pretransplant period, but with experience nephrectomy performed with certain indications. Infected hydronephrosis, calculus pyonephrosis are absolute indications to nephrectomy in pre transplant period.

**Conclusions:** In our opinion, our patient with terminal renal failure have been assessed inadequately in pretransplant period. Bilateral nephrectomy in patient with staghorn calculus both kidneys complicated by pyonephrosis was important for prophylactic urosepsis in postransplant period, when patient will receive immunosuppression therapy.

**Figure.**
P38

GRADUALLY PERFUSION METHOD BY MODERATE HYPOTHERMIA FOR AVOIDING ISCHEMIC-REPERFUSION DAMAGE OF RENAL ALLOGRAFT

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Introduction: Non-functioning kidney possibly resulting from impaired renal microcirculation may be frequently encountered when ischaemically damaged renal allografts are transplanted. Non-function kidney, a complication of cadaveric renal transplantation may be seen in a rate of 10.6-14.5%. On the other hand, inadequate perfusion of the kidney is one of the major factors which forces the surgeon not to transplant at least approximately one tenth of the harvested organs. One of the main reasons for "no-reflow phenomenon" is vasoconstriction related to hypothermia during flushout perfusion and obstruction arterioles by red blood cells in reperfusion period. We have designed new gradually hypothermic perfusion method, which to our opinion allows to avoid vasoconstriction caused by hypothermia and to create conditions adequate to flushout blood cells from arterioles and capillaries of renal allografts. This will create conditions for the improvement of microcirculation in reperfusion period and therefore will decrease ischémical-reperfusion damage of allografts.

Materials and Methods: We aimed to define the effects of vasoconstriction related to hypothermia during flushout perfusion in renal tissue microcirculation in reperfusion period. In rabbit's model in the 1st group explanted kidneys were perfused with (UW) solution at 4°C for 20 minutes, in the 2nd group perfusion was performed with UW solution at 22°C for 10 min., then at 4°C for the next 10 min. All kidneys were reperfused with the autologous blood after 48 and 96 hours' preservation. On the light microscopic examinations have been measured diameter of interlobar and arcuate arterioles of kidney. We observed manifest vasoconstriction in the 1st group and statistically significant large diameter of arterioles of kidney. W e concluded that gradually hypothermic perfusion method allows to avoid vasoconstriction arterioles by red blood cells in reperfusion period. We have designed new gradually hypothermic perfusion method, which to our opinion allows to avoid vasoconstriction caused by hypothermia and decreased the ischemic-reperfusion damages of renal allograft.

Results: On electron microscopic examinations in the 1st group erythrocyte aggregation in arterioles and capillaries, and after 48 hours preservation erythrocyte agglutination and adhesion to the endothelium were observed. Endothelial defects and erythrocyte extravasation were seen following reperfusion. In group 1, EM examination revealed red blood cell (RBC) trapping within arterioles, the glomerular and peritubular capillaries. Mild (at 48 hour) and moderate-to-severe (at 96 hour) vacuolation of proximal tubular epithelium was observed. In addition, agglutination and adhesion to the endothelium of red blood cells were also seen. In the 2nd group arterioles and capillaries were free of blood elements and microcirculation was better in reperfusion period. In the 1st group lipid peroxidation levels in renal tissue was higher and glutathione level was lower in comparison to the 2nd group. Median perfusate flow was significantly higher in the 2nd group in contrast to 1st one during perfusion and reperfusion. In group 1, RBC trapping was more severe than group 2 and platelet aggregation together with erythrocytes was also present in some areas. Hydropic degeneration, swelling of microvilli, loss of cristae of mitochondria was observed. Adequacy of microcirculation and functional status of reperfusion kidney are closely related to morphological integrity and patency of the vascular system of the organ.

Conclusions: We concluded that gradually hypothermic perfusion method allows to avoid vasoconstriction arterioles caused by hypothermia and decreased the ischemic-reperfusion damages of renal allograft.

Acknowledgements: This study was supported by Istanbul University, Research Foundation

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BLOODSTREAM INFECTIONS IN RENAL TRANSPLANT RECIPIENTS

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Introduction: Bloodstream infections (BSI) are the leading causes of mortality and morbidity in solid organ transplant recipients. The present study aimed to investigate the agents that cause bloodstream infections in the patients that underwent kidney transplantation, as well as antibiotic resistance among these agents.

Materials and Methods: A total of 91 bloodstream infection episodes that occurred in 33 renal transplant recipients, who had been followed from 2010 to 2015 in the transplantation center of our hospital, were enrolled in the study. Patient data were overviewed retrospectively.

Results: Of the patients, 25 (76%) were male and the mean age was 38 (7-64) years. A total of 91 bloodstream infection episodes were determined in 33 (18%) of 182 renal transplant recipients followed in our transplantation center. Primary blood circulation infections accounted for 43 (47%), whereas secondary blood circulation infections accounted for 48 (53%) of the BSI episodes. Urinary system was the most common (98%) origin of secondary bloodstream infections. Gram-positive bacteria were found to be the agents in 9% of bloodstream infection episodes, whereas gram-negative
bacteria were the agents in 81%, and fungi were the agents in 10%. Escherichia coli (56%) and Klebsiella pneumonia (10%) were the most frequently isolated microorganisms. It was determined that more than half of the gram-negative bacteria produced extended-spectrum β-lactamase (ESBL). E. coli accounted for 70% (36) and K. pneumoniae accounted for 18% (9) of the bacteria that produce ESBL. The rate of BSI episodes due to multidrug-resistance Acinetobacter baumannii was found to be 2.2%. Improvement was determined in all patients with BSI excluding one.

Conclusions: Gradually increasing antibiotic resistance among gram negative and gram positive bacteria unfavorably influences particularly survival and prognosis in renal transplant recipients. Knowing the epidemiology and antibiotic resistance status of the microorganisms, particularly those cause BSI that has high morbidity and mortality, would enhance the success of treatment response due to appropriate empirical antibiotic selection. Therefore, we think that each transplantation center must know the epidemiology and antibiotic resistance of their BSI agents.

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DEVELOPMENT OF MALIGNANCY FOLLOWING RENAL TRANSPLANTATION IN OUR CENTER
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Introduction: Renal transplantation provides lifesaving therapy for patients with end-stage renal disease. Transplant recipients have elevated cancer risk due to use of long-term immunosuppressive agents compared with that of the healthy population. In past ten years five hundred kidney transplants were performed in our center. The nine patients developing malignancy with renal recipient are presented.

Cases: We evaluated patients in the last two years. We have detected in nine patients (four female, five male) with cancer. Mean duration of Interval between transplantation and diagnosis was 53.1 (12-96) months. The average age was 48.8 (30-59) years. Cases are summarized in table.

Discussion: Advances in immunosuppression management have enabled prolonged survival for many transplant recipients. However, several complications of chronic immunosuppression have been identified. Studies have demonstrated an overall 2- to 4-fold elevated risk of cancer. The risk of cancer in transplant recipients greater than in the general population. The most frequent malignancies after transplantation are of the skin cancer, lymphoproliferative disorders, and Kaposi sarcoma. Two patients with lung cancer were nonsmokers. The histologic types were small-cell. The median time period between transplantation and diagnosis of lung cancer was 35 month. Two patients had chemotherapy and one of these patients died after treatment. The increased incidence of skin cancer in renal transplant recipients. Immunosuppressive therapy, solar radiation and papilloma virus infection are believed to be the most important risk factors for the development of skin cancers in renal transplant recipients. Kaposi’s Sarcoma was seen in our patient and another cause could not be shown. This patient had chemotherapy and treatment continues.

Conclusions: Identification of high-risk profile patients may help in defining the best follow-up strategy after transplantation. If diagnosed at an early stage, cancer can be managed and can offer good survival rates after treatment.

Table.

<table>
<thead>
<tr>
<th>Case</th>
<th>Age (year)</th>
<th>Sex</th>
<th>Diagnosis</th>
<th>Cause of CKD</th>
<th>Interval between transplantation and diagnosis (months)</th>
<th>Current state</th>
</tr>
</thead>
<tbody>
<tr>
<td>C.G.</td>
<td>49</td>
<td>M</td>
<td>Small Cell Lung Cancer (stage-4)</td>
<td>CGN</td>
<td>12</td>
<td>Died</td>
</tr>
<tr>
<td>C.A.</td>
<td>58</td>
<td>M</td>
<td>Small Cell Lung Cancer (stage-4)</td>
<td>MPGN</td>
<td>58</td>
<td>Died</td>
</tr>
<tr>
<td>Z.B.</td>
<td>30</td>
<td>F</td>
<td>Diffuse Large B cell Lymphoma</td>
<td>UE</td>
<td>96</td>
<td>Died</td>
</tr>
<tr>
<td>I.S.</td>
<td>54</td>
<td>M</td>
<td>Kaposi Sarcoma</td>
<td>Amyloidosis</td>
<td>36</td>
<td>Lives</td>
</tr>
<tr>
<td>T.K.</td>
<td>34</td>
<td>F</td>
<td>Invasive Ductal Carcinoma of Breast (stage-4)</td>
<td>MPGN</td>
<td>30</td>
<td>Lives</td>
</tr>
<tr>
<td>M.E.</td>
<td>51</td>
<td>F</td>
<td>Infiltrative Ductal Carcinoma of Breast (stage-3)</td>
<td>UE</td>
<td>60</td>
<td>Lives</td>
</tr>
<tr>
<td>S.I.</td>
<td>54</td>
<td>M</td>
<td>Glioblastoma Multiforme</td>
<td>HT</td>
<td>96</td>
<td>Lives</td>
</tr>
<tr>
<td>M.C.</td>
<td>59</td>
<td>F</td>
<td>Gastric Adenocarcinoma</td>
<td>PKD</td>
<td>52</td>
<td>Lives</td>
</tr>
<tr>
<td>K.D.</td>
<td>51</td>
<td>M</td>
<td>Colon Adenocarcinoma</td>
<td>HT</td>
<td>38</td>
<td>Lives</td>
</tr>
</tbody>
</table>

Abbreviations: CGN, Chronic Glomerulonephritis; F, Female; HT, Hypertension; M, Male; MPGN, Membranoproliferative Glomerulonephritis; PKD, Polycystic Kidney Disease; UE, Uncertain Etiology

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THE EFFECTS OF THE PERITONEAL DIALYSIS CATHETER REPLACEMENT METHODS: OPEN VERSUS LAPAROSCOPIC PRE-PERITONEAL TUNNELING APPROACH
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Introduction: The key to achieve adequate peritoneal dialysis, a functioning catheter should enable unrestricted inflow and outflow of the dialysate liquid from the peritoneal cavity with an intact peritoneal membrane. Despite its advantages, complications, such as outflow obstruction, catheter-related infection, and dialysate leak, still remains problematic. Various laparoscopic techniques for catheter placement have been investigated. The main purpose of this study was to compare the laparoscopic and open surgical peritoneal dialysis (PD) catheter insertion techniques in a
retrospective manner according to catheter survival and complications and the safety of both techniques.

**Materials and Methods:** The study included end stage renal disease patients in our hospital to whom a PD catheter was replaced between 2007 and 2014. Sixty-nine patients were enrolled into the study. Patients were divided into two groups: the open technique (OT) group and the laparoscopic pre-peritoneal tunneling approach (LA) group. Continuous ambulatory peritoneal dialysis catheters (CAPD) were replaced into 35 patients via LA and 34 via OT. Extracted data included patient demographics, operative data, catheter related complications and follow-up data.

**Results:** All of the CAPD related complications; peritonitis, malposition, outflow obstruction, and leakage were lower in the LA group. We found that, in this study, the LA group patients had better survival rates compared with the OT group, especially the long-term survivals. All of the CAPD related complications, such as peritonitis, malposition, outflow obstruction, and leakage were lower in the LA group. However, the peritonitis, malposition and groin hernia rates were also statistically significantly lower in the LA group.

**Conclusions:** According to our results, when compared with the published data, we recommend laparoscopic CAPD catheter replacement with a pre-peritoneal tunneling technique. The technique is safe and offers a better outcome.

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**EARLY DIAGNOSIS AND SUCCESSFUL MANAGEMENT OF ACUTE HUMORAL REJECTION VIA REGIONAL TISSUE OXYGEN SATURATION PROBE**

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**Introduction:** Clinical presentations of early vascular complications and acute rejections in kidney transplantation are severe and usually cause graft failure. Early diagnosis of these complications is very important in order to start immediate treatment. Near-infrared spectroscopy (NIRS) is a noninvasive, portable technology similar to pulse oximetry, which monitors oxygenation in the brain, muscle, and other organs to detect tissue hypoxia-ischemia in real-time. Here we present early diagnosis of an acute humoral rejection detected via regional tissue oxygen saturation (SctO2) probe which was associated with a decrease in urinary output and confirmed by renal transplant Doppler ultrasonography (USG) scan and renal biopsy.

**Case:** A 52-year-old male patient underwent a second renal transplantation from a living donor. His preoperative panel reactive antibody (PRA) levels were 14% and 80% for class I/class II respectively. There were two donor specific antibodies (MFI values were 2465 and 2814) but lymphocyte cross match tests (complement dependent cytotoxicity, flow cytometry and luminex) were negative and no desensitization protocol was used. 100 mg antithymocyte globulin (ATG) was used for induction therapy and 1000 mg methylprednisolone was given during the operation. An intraoperative bleeding occurred from renal vein anastomosis and 2 units of erythrocyte suspension were infused however during the anesthesia course the patient’s hemodynamic parameters were stable. Cold ischemia time was 2 hours and 5 minutes. With the end of the surgery renal graft’s oxygen saturation was monitored with a SctO2 probe as a part of a prospective study designed by the anesthesiology department. At the postoperative 10th hour suddenly a significant (more than 2%5) decrease in SctO2 correlated with urinary output decrease (50%) occurred (shown at the figure) and an urgent renal transplant Doppler USG was performed. Renal cortical hypoperfusion and resistive patterns of the main renal artery and interlobular arteries compatible with rejection was detected in USG scan. An acute humoral rejection was suspected and treated with plasmapheresis, pulse steroid, and IV immunoglobulin (IVIG). A renal biopsy was also performed in order to confirm the suspected diagnosis. Renal biopsy showed a combined acute humoral and acute cellular rejection and ATG was added into the treatment. After a total of 15 plasmapheresis, 17 doses of ATG (1700 mg), 11 doses of IVIG (150 gr), and 4650 mg of methyl prednisolone, patient’s renal functions recovered and he was discharged at the postoperative 34th day with a creatinine level of 1.9 mg/dL. His last creatinine level was 0.97 mg/dL at the time of this report written.

**Conclusions:** We consider that regional SctO2 can be an indicator for early complications of renal transplantation. Further prospective studies are needed to support our hypothesis.

**Figure:** Postoperative SpO2 - SctO2 and Postoperative Urine Output Correlation

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**Figure:** Postoperative SpO2 - SctO2 and Postoperative Urine Output Correlation
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**MORPHOFUNCTIONAL RENAL DISORDERS THAT OCCUR WITH BRAIN TUMORS**

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**Introduction:** Study of changes in kidney that occurs at central nervous system lesion, did not get sufficient attention in clinical medicine, including nephrology. There is a data exists that proteinuria can increase when there are brain diseases, especially when it is subarachnoid hemorrhage, negative emotions, and stress (Arthur M. Fishberg, M.D., 1957). Brain pathology can initiate severe renal failure (Mehran R, Aymong ED, Nikolsky E. 2004). Renal failure at brain disease mechanism is associated with vasoconstriction of renal vessels of central genesis and in foreign literature it is called neurogenic nephropathy (Arthur M. Fishberg, M.D., 1957). The study of morphofunctional renal disorders at brain tumors is subject of interest.

The purpose of the study: to reveal morphofunctional kidney disorders that occurs with brain tumors

**Materials and Methods:** Material of study was kidney tissue samples taken from 30 patients that died from various brain tumors. Kidney tissue samples were fixed in 10% neutral buffered formalin solution. After traditional procedure histological sections were dyed with hematoxylin, eosin, Van Gieson's and Mason's trichrome, congo-red. Then silver impregnation and PAS reaction were conducted. Histological examination were done by Axioskop 40, CarlZeiss, Germany microscope, at 100X, 400X magnification.

**Results:** Patomorphologic tissue changes were found in all 30 cases that accounts for 100%. From there: 23 cases (73.6%) of dyscirculatory-hypoxic alteration of nephrothelial tubules (acute tubular necrosis), 3 cases (10.0%) of chronic tubular-interstitial nephritis, 2 cases (6.6%) of interstitial nephritis due to sepsis, 1 case (3.3%) of glomerulosclerosis due to arterial hypertension, 1 case (3.3%) of thrombotic microangiopathy.

**Conclusions:** Severity and longevity of underlying disease of died patients did not let reliable estimation of morphofunctional renal disorders that occurs with brain tumor. It might be pointed out that 9 out of 30 died patients had proteinuria upon clinics arrival. Those patients were not found to experience chronological kidney pathologies. Such cases might be materials for further studies with immunoluminometric microscopy, immunohistochemistry, and molecular genetics application.

**P44**

**OVERCOMING SURGICAL CHALLENGES IN LIVING DONOR KIDNEY TRANSPLANTATION: MODELING UPPER POLAR ARTERIA BY USING AFTERIA EPIGASTRICA INFERIOR**

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**Introduction:** Kidney transplantation is the treatment of choice for patients with the end stage renal disease. Even though we have improved surgical techniques, there are still challenges with donor grafts as a result of anatomic variants of the vessels. Our aim was to demonstrate the results of surgical technique by using a. epigastrica inferior grafts to reconstruct polar arteria in 6 living donor kidney transplantations.

**Materials and Methods:** A total of 120 kidney transplants, including 9 from cadaveric donors, were performed at National research center for oncology and transplantation, between 2010 and 2014. This study included 6 case reports of living donor kidney transplantations where during the donor kidney retrieval polar arteries were damaged: 5 arteries at the upper pole and 1 artery at the lower pole of the kidney. All 6 donors had a CT angiography prior to the surgery; however the polar arteries were not confirmed during the imaging which resulted in random transection of polar arteries. The diameter of the polar vessels ranged from 2.0 to 2.5 mm, and the area of blood perfusion to the renal parenchyma was 15%. After retrieval of the graft, the transplant was perfused with cold organ preserving solution by cannulation of the arteries. The length of the polar arteries after transection during the organ retrieval was within 1.5 to 2.5 cm which was not sufficient to perform anastomosis. In order to extend polar artery we used a. epigastrica inferior. During the surgery, a 4.0 to 6.0 cm length of a. epigastrica inferior was mobilized and retrieved, with further washing by using organ preservation solution, then under the magnifying microscope "end-to-end" anastomosis was performed with kidney polar artery. The next step was to perform "side-to-side" anastomosis of the extended polar artery with the main artery of the donor's kidney to create a single arterial trunk. A transplanted kidney was implanted in recipient by "end-to-side" anastomosis with external or common iliac arteries. Anticoagulation therapy was prescribed to prevent thrombosis during the first 3 to 5 post-operation days.

**Results:** During the early post-operative period Doppler examination of the transplant kidneys did not show any signs of impaired blood flow at anastomotic sites. In all 6 cases after reperfusion of transplanted kidneys blood flow in polar arteries and in kidney parenchyma was satisfactory.
Conclusions: Our vascular technique for extending kidney polar artery by using a. epigastrica inferior allowed us to save and improve the functional capacity of the graft.

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MALPOSITION OF PERIPHERALLY INSERTED CENTRAL VENOUS CATHETER IN THE GRAFT HEPATIC VEIN

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Introduction: Central catheters are using for delivery of medications parenteral nutrition measurement of hemodynamic variations and providing the longterm intravenous access. In our clinic during liver transection in living liver donor peripherally inserted central venous catheters are generally preferred because it is a less invasive technique and have lower complication risk.

Case: In this report we present the case of 36 years old male liver donor, in whom we insert a peripherally central venous catheter from his left basilic vein. After transecting the hepatic vein the surgeon found a foreign material inside the venous lumen, which is the distal part of our catheter.

Conclusions: Catheters rarely have the risk of malposition complications related with their longevity.

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RARE FORMS OF KIDNEY DISEASE, DIAGNOSED MODERN MORPHOLOGICAL STUDIES

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Introduction: The critical for accurate diagnosis of major pathological processes in renal biopsy specimens matters comprehensive morphological study using immunofluorescence and electron microscopic techniques. The incidence of fibrillar (FGN) and cryoglobulinemic (CGN) glomerulonephritis corresponded to the literature and has been relatively rare, about 1% of lifetime renal biopsy. We aimed to report the morphological patterns of rare form of glomerulonephritis such as FGN and CGN.

Materials and Methods: Histologic and histochemical evaluation of kidney tissue was provided as following: they fixed in 10% neutral formalin and then embedded in paraffin by conventional methodology. From the paraffin blocks were made 3-5 mm thick slices, which were stained with hematoxylin and eosin, Masson - trichrome, Congo - mouth, PAS and silver. Immunofluorescence studies were performed by the standard technique and stained with antibodies FITC. Microscopy was carried out on light-optical systems «Axiostar» and «Axioskop -40» firm "C. Zeiss". For electron microscopic study of biopsy pieces of kidney tissue were fixed in 2.5% glutaraldehyde solution with postfixation in 1% solution of osmium tetroxide, conducted by the conventional method and embedded in Epon. Semifine and ultrathin sections were prepared on an ultramicrotome Leica. Semifine sections were stained with methylene blue, azure 2 and basic fuchsin (C. Humphrey, F. Pittman, 1974). Ultrathin sections were contrasted with uranyl acetate and lead citrate according to Reynolds, examine and store in an electron microscope Libra 120 (C. Zeiss).

Case 1: The clinical picture of FGN was presented as part of the nephrotic syndrome. Histological and histochemical study showed the presence of subepithelial deposits in vascular loops glomerular basement membrane and the splitting of the vessel walls. Histochemical reaction with Congo red amyloid was negative. When the immunofluorescence evaluation of glomerular capillaries and interstitium were detected, a bright deposits of IgG, lambda light chains and less bright - IgA, kappa and heavy chains of fibrinogen (Figure 1A). At the electron microscopic examination revealed fibrillar deposits located subepithelial and intramembranozno. Fibril diameter ranged from 10 to 13 nm (Figure 1B). Podocytes feet were smoothed. A comprehensive study using electron microscopy made it possible to diagnose the disease - fibrillar glomerulonephritis.
Case 2: The clinical picture of CGN was introduced as part of nephrotic syndrome of unknown origin. Histological and histochemical pattern of CGN was presented as membranoproliferative form. In glomerular vascular loops found intra-capillary thrombi composed of red blood cells and hyaline masses (Figure 2A). Hyaline "clots" were also noted in the capillaries of the microvasculature interstitium. The walls of the blood vessels of small and medium caliber were thickened. Histochemical reaction with Congo red amyloid was positive (Figure 2B). Immunofluorescence study showed the most striking deposition IgG, heavy kappa, lambda light chains and less bright - IgM and fibrinogen (Figure 3). At the electron microscopic study of capillary vascular glomeruli contained material of moderate electron density flaky and fibrillar structure. The capillary endothelium of the glomeruli had arcadial form to the underlying electron transparent voids. Along the glomerular basement membrane and vascular tubules have thick deposits of fine fibrils with a diameter of about 10 nm. Thus histopathological diagnosis corresponded CGN combined with amyloid nephrosis.

Conclusions: The use of the electron microscope and immunofluorescence research methods allows specifying an accurate diagnosis in the differential diagnosis of renal disease.

P47 PRESERVATIVE SOLUTION EFFLUENT OSMOLALITY AS A PREDICTOR OF RENAL TRANSPLANT INITIAL DYSFUNCTION

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Introduction: The aim of the study was to identify new predictors of kidney graft primary dysfunction, obtained from deceased donors, based on the study of metabolic, electrolyte composition and preservative solution effluent osmolality.

Materials and Methods: The samples of "Custodiol" preservative solution effluent (produced by «Dr. F. Köhler Chemie») were taken from the left renal vein at the stage of kidney explantation and "back-table" operation in 55 cadaveric donors. We compared metabolic parameters (glucose, lactate), electrolytes (potassium, sodium, calcium, chlorine) and effluent osmolality of kidney donors, whose recipients had satisfactory initial graft function (Group №1, n = 46) or kidney transplant dysfunction (group №2, n = 26). Mean values are shown as median with 25% and 75% quartile interval - Me (25; 75). Comparison of the quantitative variables was performed using the Mann-Whitney test.

Results: The comparison of shown above effluent values on the explantation stage from 1st and 2nd group of donors figured statistically significant difference in the values of osmolality (mmol/kg): 85 (71.6; 97.1) and 105 (88.2; 114.7) (p = 0.043), respectively. A tendency to a difference in the levels of sodium ions (p = 0.08), calcium (p = 0.07), and lactate (p = 0.06) was seen, but no statistical significance was found. In the study of these parameters on the stage of "back-table" operation no differences were found.

Conclusions: As a predictor of the initial function of kidney transplant from a deceased donor it is possible to use the level of the "Custodiol" solution effluent osmolality, obtained at the stage of explantation.
**P48**

**COMPUTED TOMOGRAPHY IN THE PREOPERATIVE AND POSTOPERATIVE EVALUATION OF PATIENTS WITH KIDNEY TRANSPLANTATION**

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**Introduction:** Computed tomography is a mandatory method of investigation for selection of patients to kidney transplantation. We aimed to assess the diagnostic relevance and effectiveness of the multiphase computed tomography (MSCTA) in the evaluation of patients before and after transplantation.

**Materials and Methods:** 32 living kidney donors (15 male and 17 female) underwent contrasted MSCTA before kidney transplantation for reason of pre-transplant evaluation and 2 post-transplant recipients (2 male) due to abnormal vascularization. Parenchymal blood flow condition and vascular architectonics of the transplanted kidneys were determined. All the patients underwent pre-study with Doppler ultrasound.

**Results:** In our practice, additional renal artery (ARA) were found in 32.3% (n = 11) cases. Single ARA, from the aorta to the lower segment of the kidney was observed in 72.7% (n = 8) cases. Dual ARA, with equivalent caliber trunks, was observed in 27.3% (n = 3) cases. Of all the cases of ARA were common in women – 54.5%, (n = 6). Concomitant renal pathology was detected in 9.3% of cases: simple cysts in 2, hydronephrosis transformation from one donor. This case is the “accidental discovery” and excluded from the number of donors. In addition, all patients held excretory phase CT , and also evaluated renal function and urinary system. MSCTA was conducted for suspicion of graft dysfunction and vascular complications. Recipients showed a decrease venous return with timely arterial filling of the renal arteries. This is manifested as delayed contrast medulla transplanted kidney. Renal parenchymal ischemic zones were consistent with microvasculature thrombosis. The last was the most common cause of vascular complications.

**Conclusions:** A MSCT is the necessary tool to estimate the structure and the condition of vascular architectonic in kidney of donors and recipients. It is mandatory to do MSCT in cases of doubtful Doppler results and should be carried out in cases of suspected vascular complications of renal graft.

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**Figure:** Contrast MSCT of Post Transplant Recipient Kidney: A) Arterial Phase; B) Venous Phase

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**MICROBIOLOGICAL MONITORING OF PATIENTS BEFORE AND AFTER KIDNEY TRANSPLANTATION**

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**Introduction:** Chronic respiratory infection can cause serious complications for immunosuppressivethetry in the post-transplant period. The aim of this study - was microbiological monitoring of patients before and after kidney transplantation.

**Materials and Methods:** A total of 30 patients before and after kidney transplantation from the department of transplantation of National Scientific Medical Research Center during 2013-2014 were included to the study. From this patients studied microbiological screening of throat, nasal swabs and sputum before and after kidney transplantation. Etiological factor considered concentration 10^5 CFU in 1 mL and above. The identification of isolates and antibiotic susceptibility testing were performed by Vitek 2 (bioMerieux) automated system.

**Results:** Microbiological screening of respiratory tract before transplantation showed that 29 of 30 patients contained isolates in a concentration of 10^5 CFU in 1 mL and above. In 10 patients (34.4%) was represented by the association isolates from the throat swab. Streptococcus pneumoniae was the most frequently pathogen (37.9%) at a concentration of 10^5 - 10^6 CFU/mL (5 patients in associations and 6 cases in monoculture). From 4 patients stood Enterococcus durans, one in monoculture and in association with three Haemophilus haemolyticus, Klebsiella pneumoniae, Streptococcus pyogenes. Nasal swabs were presented Staphylococcus aureus from 3 patients, Staphylococcus epidermidis from 6 patients, Moraxella catarrhalis from one patient. Microbiological analysis of sputum showed that only 15 patients contained microorganisms in the etiologically concentrations (11 patients was in monoculture and 4 in association). Monoculture of Streptococcus pneumoniae was introduced from 6 patients, Enterococcus durans from one patient with a concentration of 10^8 CFU/mL, Streptococcus
sanguis and Streptococcus pyogenes 2 from patients. Microbiological screening after transplantation shows that only 6 patients were allocated isolates in a concentration of 105 CFU/mL and above. Streptococcus pneumoniae was detected from the throat in 4 patients and one of the sputum (all in monocultures) are not detected Staphylococcus aureus and Enterococcus durans.

**Conclusions:** The results of studies on the microbiological screening of respiratory infection before and after transplantation, showed a decrease in the frequency of isolation of pathogenic and conditionally pathogenic isolates, so it is possible to significantly reduce septic complications.

**P50**

**ALVEOLAR HEMORRHAGE AND INTERSTITIAL LUNG DISEASE IN A PATIENT TREATED WITH EVEROLIMUS: A CASE REPORT**

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**Introduction:** Everolimus is a drug that suppresses the immune system by preventing T lymphocyte activation and proliferation through the mTOR pathway. It is used after solid organ transplantation to prevent organ rejection and it is also known as an antineoplastic agent. Herein, we present a case of alveolar hemorrhage and interstitial lung disease in a renal transplant patient using everolimus.

**Case:** A forty-seven year-old patient was admitted with complaints of cough and bloody sputum. He had renal transplantation 15 months ago. The etiology of end stage renal disease was amyloidosis due to familial Mediterranean fever. Everolimus was started 5 months ago because of the calcineurin inhibitor toxicity. On physical examination, bilateral basal crepitan crackles were detected. In chest X-ray, bilateral interstitial infiltrates, reticular images, and alveolar opacities were detected. In HRCT revealed ground-glass opacities, infiltrative appearance consistent with bronchial wall thickening and diffuse alveolar hemorrhage in bilateral middle and lower zones. Transbronchial biopsies of the posterior segment of the right lower lobe were consistent with interstitial lung disease and hemosiderin laden macrophages were observed in BAL. These pathologies were considered to be due to everolimus. Everolimus was withdrawn, tacrolimus was started and the dose of steroid therapy was increased. The patient was promptly recovered with no symptoms.

**Conclusions:** Everolimus is known to have diverse lung-related complications including interstitial lung disease and alveolar hemorrhage. Transplant physicians should be aware of such life-threatening complications related to everolimus.

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**ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY IN KIDNEY TRANSPLANTATION PATIENTS: RESULTS OF A SINGLE CENTER**

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**Introduction:** We aimed to report the outcomes of endoscopic retrograde cholangiopancreatography (ERCP) procedures performed for diagnostic and therapeutic purposes in patients with kidney transplantation.

**Materials and Methods:** The records of kidney transplantation patients between January 1993 and December 2014 were evaluated retrospectively. Olympus JF240 was used as duodenoscope with a tip outer diameter of 12.6 mm and working channel diameter of 3.2 mm. ERCP was carried out under deep sedation, which was performed by staff in the Department of Anesthesiology. Midazolam plus propofol was the used regimen.

**Results:** Data of 21 kidney transplantation patients (16 men and 5 women; mean age at ERCP, 42.6±23.4 years) were evaluated. A total of 23 ERCP procedures were performed. The indications were choledocholithiasis in 28.6% (n=6), common bile duct dilatation plus liver enzyme elevations in 19% (n=4), liver enzyme elevation alone in 19% (n=4), biliary necrotizing pancreatitis in 9.6% (n=2), cholangitis in 23.8% (n=5) of the patients. Hepatobiliary ultrasound found that 14.3% (n=3) had absence of gallbladder due to cholecystectomy, 66.7% (n=14) had gallstones, 4.7% (n=1) had gallstones with cholecystitis findings and 14.3% (n=3) were normal. ERCP findings were normal in 19% (n=4), cholangitis in 9.6% (n=2), choledocholithiasis in 47.6% (n=10), bile duct wall irregularities in 9.6% (n=2), diluted common bile duct in 9.6% (n=2) and cholangiocarcinoma in 4.7% (n=1). Sphincterotomy was performed in 16 patients.

None of the patients who underwent ERCP did not develop any complications, such as acute pancreatitis, bleeding, duodenal or bile duct perforation.

**Conclusions:** In patients with kidney transplantation, ERCP procedure is safe and provides substantial information for management of biliarypancreatic diseases.
P52
PROPHYLACTIC ECULIZUMAB THERAPY FOR ATYPICAL HEMOLYTIC UREMIC SYNDROME IN A PEDIATRIC RENAL TRANSPLANT PATIENT

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Introduction: Atypical hemolytic uremic syndrome (aHUS) is observed with microangiopathic hemolytic anemia, thrombocytopenia and acute renal failure. There is a risk of high morbidity and mortality in the acute period within this disorder with high possibility of end-stage kidney failure in the long term. The results of the kidney transplantation are not satisfactory due to recurrence risk of aHUS and graft loss. The use of prophylactic eculizumab before and after transplantation can change this outcome. We present a transplanted child, who has renal failure due to aHUS and the usage of prophylactic eculizumab before and after the transplantation.

Case: A boy, diagnosed with aHUS at the age of 2.5 years, developed chronic renal failure in spite of the plasma infusion and exchange. He was taken into peritoneal dialysis programme. A renal transplant from the father was performed on the patient at the age of 4 years. CFH, CFI, C3 levels were normal before transplantation both for recipient and donor. Genetic mutation analysis is still under process. Five sessions of daily plasma exchange were performed before transplantation. Prophylactic eculizumab was used one day before the transplantation, and he was provided with eculizumab within the first day after the transplantation, and once in a week during the 4-week period. After 4th dose, eculizumab was continued every 2 weeks. During follow-up creatinine, hemoglobin, platelet and LDH levels were monitored at normal levels. There was no evidence of recurrence in follow-up period.

Conclusions: Eculizumab is an effective and safe therapy for preventing disease recurrence and maintaining graft functions in patients with aHUS. Large studies are needed for identification of optimal treatment duration and definite treatment protocol.

P53
EFFECTS OF EARLY HYPERTENSION ON LONG-TERM ALLOGRAFT OUTCOMES

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Introduction: Hypertension after pediatric renal transplant is a common and important risk factor for graft loss and patient survival. Reported prevalence of hypertension following renal transplantation ranges between 60% and 90% depending on the diagnostic criteria for hypertension. Blood pressure control after transplantation is inversely associated with glomerular filtration rate (GFR). The mechanism of post kidney transplant hypertension is complex and multifactorial. Its presence is a significant and independent risk factor for poor long-term graft survival. Hypertension significantly increases the risk for chronic graft loss and accelerates the deterioration of transplanted kidney function. Aggressive control of blood pressure is recommended in the posttransplant period when maintenance levels of immunosuppressive drugs are achieved. We evaluated the effect of early hypertension after transplantation on the long-term allograft outcomes.

Materials and Methods: We conducted a retrospective case note review of all current pediatric kidney transplant patients, with data collected at 3rd month, first and 3rd year of transplantation. Hypertension is defined as average systolic and/or diastolic blood pressure that is greater than or equal to the 95th percentile for sex, age and height on three or more occasions. Effects of arterial hypertension on the long-term allograft outcomes such as GFR, rejection and graft loss were studied.

Results: 133 pediatric renal transplant patients were enrolled to the study. The mean age was 12.78±4.76 years at the time of transplant. 97 patients received living related donor allograft and the remaining 36 were from deceased donors. The mean time after renal transplantation was 4.91±1.4 years. 94 patients (70.7%) were hypertensive at 3rd month of transplantation. ACE inhibitors were used first for antihypertensive treatment. Ca channel blockers were added at step 2 and most patients received an ACE inhibitor and a Ca channel blocker. Mean antihypertensive drug number using by patients was 1.48±0.61. An effective blood pressure control was obtained in all patients. There was not any difference between mean GFR values at 3rd month, first and 3rd year after transplantation. ACE inhibitors were used first choice for antihypertensive treatment. Ca channel blockers were added at step 2 and most patients received an ACE inhibitor and a Ca channel blocker. Mean antihypertensive drug number using by patients was 1.48±0.61. An effective blood pressure control was obtained in all patients. There was not any difference between mean GFR values at 3rd month, first and 3rd year after transplantation. GFR at the first year of the transplantation was significantly lower in patients with early hypertension when compared normotensive patients. This relation could not be demonstrated for GFR at the 3rd year of the transplantation. We did not show any relation between early hypertension and rejection episodes and graft loss.
Conclusions: The prevalence of hypertension is higher in renal transplanted children. Although this higher prevalence, we cannot demonstrated any significant effect of hypertension on long-term allograft outcomes. We suggest that these findings must be related with the effective blood pressure control with antihypertensive treatment during follow-up. Blood pressure measurement has an important value for prevention of the graft function.

P54
SERUM VITAMIN D LEVEL AFTER RENAL TRANSPLANTATION IN CHILDREN

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Introduction: Adequate vitamin D status is important for bone health. It plays an important role in catch-up growth after transplantation. Vitamin D deficiency was shown to be prevalent among renal transplant patients. We examined the status of vitamin D status and the risk factors of inadequate vitamin D level in pediatric renal transplant patients.

Materials and Methods: Seventy-five children (M/F: 39/36) with well functioning graft were enrolled to the study. Demographic data, immunosuppressive treatment, laboratory findings, rejection and graft loss were noted. The estimated glomerular filtration rate (eGFR) was calculated by Schwartz Formula. At the first year of the transplantation an early-morning fasting blood sampling was assessed from patients for the measurement of vitamin D, intact parathyroid hormone (iPTH), serum calcium, phosphorus, alkaline phosphatase, bicarbonate, creatinine and calcineurin inhibitors levels. Vitamin D deficiency was defined as serum vitamin D level under 25 ng/mL. Vitamin D insufficiency was defined as vitamin D level under 10 ng/mL. Relation between risk factor related graft function and vitamin D level was analyzed.

Results: Mean age of the patients was 16.83±5.45 years. Mean duration of end stage renal failure before transplantation was 46.8±31.7 months. 59 patients received living related donor allograft and the remaining 16 were from deceased donors. Mean follow-up time after transplantation was 4.58±1.35 years. 31 patients had rejection episodes during follow-up. We did not show any correlation between vitamin D level and gender, age, donor status, immunosuppressive protocol, steroid doses and graft loss. We did not find any relation between vitamin D status and GFR at first and 3rd year of the transplantation. Vitamin D levels between patients with and without rejection were similar. Body mass index of the patients were not related with the vitamin level. Forty-eight patients (64%) had vitamin D deficiency and 11 patients (14.7%) had vitamin D insufficiency. Mean duration of dialysis were similar for both patients with and without vitamin D deficiency and insufficiency. Parathormone level was similar for both patients with and without vitamin D deficiency. Although parathormone levels were significantly higher in patients with vitamin D insufficiency when compared with patients without deficiency (p=0.007). There was any difference for GFR values at first and 3rd year of transplantation between patients with or without vitamin D deficiency and insufficiency.

Conclusions: We demonstrated that despite a well functioning graft, vitamin D deficiency is a common problem in pediatric renal transplant patients. We could not show any relation between vitamin D level and immunosuppression protocol, GFR value, rejection episodes and graft loss. We suggest a routine program for periodic screening of these patients to facilitate early diagnosis. It might allow the development of treatment strategies to minimize or prevent the detrimental effects of vitamin D deficiency on bone health and growth in children after renal transplantation.

P55
FIRST EXPERIENCE OF SIMULTANEOUS PANCREAS-KIDNEY TRANSPLANTATION FROM LIVING DONOR IN KAZAKHSTAN

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Introduction: In Kazakhstan, a growing number of patients with type 1 DM, which is complicated by diabetic nephropathy is on dialysis now. Introduction of simultaneous pancreas and kidney transplantation (SPK) in clinical practice of our medical institutions is extremely important and relevant. However, until recently, in Kazakhstan SPK was not carried out. The first SPK in our country was performed in September 2012. The purpose of the study was to explore and implement the method of simultaneous pancreas-kidney transplantation from living donor in Kazakhstan.

Materials and Methods: The recipient was 31-year old male, suffering from diabetes mellitus type 1 from the age of 10, which was complicated by diabetic nephropathy. From 2012 he was on hemodialysis. The donor was 28-year old, healthy brother. The procurement was done by laparoscopic hand-assisted method. First left side nephrectomy was performed
and then distal pancreatectomy together with spleen. The combined kidney and partial pancreas transplantation went uneventful.

**Results:** Both the donor and recipient are doing well and they have normal renal function and blood glucose levels. No rejection of pancreatic or renal graft has been documented. Recipient maintained serum glucose levels at less than 130 mg/dL without insulin therapy. There were no major surgical complications after transplantation.

**Conclusions:** Living donor SPK can represent a successful treatment option for patients with DM 1 and end stage renal disease. Recipient maintains normal serum glucose levels without insulin therapy. The procedure can be performed safely in the donor and with low morbidity in the recipient.

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**P56**

**ASSOCIATION OF LIPID AND CARBOHYDRATE EXCHANGE INDICATORS WITH LEP, ADIPOQ GENES' POLIMORPHISM, FTO-α AND PPARG2 FACTORS IN PATIENTS WITH DIABETES MELLITUS II WITH COMPLICATED DIABETIC NEUROPATHY**

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**Introduction:** Diabetes type 2 (DMII) is one of the most widespread diseases at recent time. There are approximately 382 million people with diabetes in the world today. As well as worldwide, high incidence rate of DMII is noted in Azerbaijan Republic. Screening inspection results of Azerbaijan Republic population on DM detectability testify to double increase in number of a disease - from 50 thousand in 2002 to 100 thousand in 2008. In 2013 in Azerbaijan for 85% of patients with diabetes it was diagnosed DMII. One of serious complications of DM is the diabetic neuropathy (DN). Prevalence of DN according to various data, is 20-30%, and the risk of development of the chronic renal failure (CRF) at the background of DM form is 25 times higher in comparison with non diabetic persons.

**Materials and Methods:** In total 127 people aged from 40 to 81 years are examined, middle age made 63.5±6.12 years, male - 68 (53.5%), female - 59 (46.5%). Duration of DMII was from 1 year to 22 years. Surveyed are divided into 3 groups: The I group - 72 (56.7%) the patient, suffering from DMII and DN; The II group - 35 (27.6%) the patients suffering from DMII without DN; The III group - 20 patients (15.7%) with a neuropathy without DMII. The standard complex clinic-laboratory inspection including collected anamnesis, physical survey of the patient, laboratory and genetic researches are used.

**Results:** The HbA1c serum level of patients of I and the II surveyed groups which are respectively 9.5±2.17% and 9.4±2.35%. Thus at most of patients the raised maintenance of HbA1c was noted. Low GFR levels in surveyed groups are revealed at patients with a neuropathy that points to the current structural violations which promote decreasing of renal blood flow.

**Conclusions:** The obtained data of molecular and genetic inspection of patients with DMII can be used for identification of the patients belonging to group with developmental risk of atherogenous dyslipidemia for the purpose of carrying out at them timely preventive and medical actions. Establishment of genetic markers opens opportunity for clinical physicians to form groups of risk and forecasting of development, both the disease, and its
Introduction: Primary hyperoxaluria is a metabolic disorder with autosomal recessive inherited, which is characterized with urolithiasis, nephrocalcinosis and kidney failure in early stages. Primary hyperoxaluria type 1 occurs due to lack of hepatic peroxisomal alanine-glyoxylate aminotransferase enzyme activity. It is accepted that for these patients, the most effective treatment in case of kidney failures is combined transplant of liver and kidney transplant. There are different opinion regarding the transplantations in which some argue the transplants of liver and kidney should be done simultaneously, and some argue that one should first execute liver transplant and then kidney transplant. We presented two cases of siblings; where in the first case liver transplant was performed before kidney transplantation from the same donor whereas in the second case only liver transplant was performed.

Cases: An 11-years-old girl applied to department for transplantation. During the first examinations at the age of 8.5 years due to urinary system infection, kidney stones and bilateral nephrocalcinosis were identified. While creatinine levels of the patient were raising, her oxalate excretion levels were found high, and she began to receive dialysis treatment prior to application to our department. Her genetic analysis was resulted as p.Arg36Cys heterozygote and p.Lys31X homozygote mutation in AGXT gene. A liver transplantation was performed from the mother to the patient, who had been diagnosed as primary hyperoxaluria type 1, and then two months later, successful kidney transplantation was performed from the same donor.

In the case of 9-years-old boy, kidney stones and bilateral nephrocalcinosis were identified in urinary system ultrasound while there was no complication, being examined for primary hyperoxaluria due to his sister. While his urinary oxalate excretion levels and serum oxalate level increased, serum creatinine was 1.27 mg/dL and eGFR was 52 mL/min/1.73 m². He had the same mutation as his sister. He had been diagnosed as primary hyperoxaluria type 1 and a liver transplantation was performed to the patient at age of 7.5 years, from the aunt. His serum creatinine and urinary oxalate excretion decreased to normal levels 18 month after the liver transplantation.

Conclusions: Early diagnosis of patients with hyperoxaluria is crucial in directing the treatment. For cases of end stage kidney failure, liver and kidney transplantation seem to be the most effective treatments for the time being. In the early stages of renal failure, only liver transplantation may be sufficient in preventing accumulation of oxalate.
The most commonly seen bacteremia type was secondary bacteremia among both liver and kidney transplant recipients. The most common source of secondary bacteremias were urinary system among kidney transplantation recipients whereas intraabdominal infections were the commonest source among liver transplant recipients.

Gram negative microorganisms were more commonly seen in secondary than primary bacteremias ($p=0.000$). Also gram negative bacteria were the most common agents in both transplant and malignancy groups. Escherichia coli was the most commonly isolated (31%) bacteria both among all bacteria strains (31%) and also among the gram negative strains (46.1%). Fifty percent of the E.coli isolates were ESBL positive. Acinetobacter baumannii was the second most common gram negative agent and the ratio of XDR isolates among Acinetobacter isolates was 74%.

Conclusions: Gram negative bacteria are the most common causative agents of bacteremia in immunocompromised patients in our hospital as in accordance with the previous studies. The percentage of primary catheter-related bacteremia was lower than the data from America and Turkey. The most convenient explanation for this incompatible result is the difficulties in the diagnosis of catheter-related bacteremia: firstly, catheters cannot be removed from every patient; secondly, removed ones cannot be sent to the microbiology laboratory for the cultivation; thirdly, differential-time-to-positivity cannot be determined in daily routine practices.

P59
EXPERIENCE OF INVASIVE FUNGAL DISEASE IN 2013 AT BASKENT UNIVERSITY

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Introduction: The aims of this study were:
- to evaluate the types and the distribution of IFD;
- to determine the probable risk factors in the development of IFD
- to determine the applied treatments at the Ankara Hospital of Başkent University in the previous year.

Materials and Methods: This prospective descriptive study was conducted at the Ankara Hospital of Başkent University, a 288-bed, tertiary hospital in the capital city of Turkey. A total of thirty-nine patients with the diagnosis of invasive fungal disease were enrolled in this study during approximately one-year period from 1st December 2012 to 15th November 2013. The classification of each case was defined by the consensus guideline of European Organization for Research and Treatment of Cancer / Mycoses Study Group (EORTC/MSG). The records of each patient were written on a structured form including age, gender, underlying diseases and mortality during their hospitalization period and even after their discharge from the hospital if necessary.

Results: Two-thirds of the 39 patients were female. The mean age of patients (range, 22 to 88 years) were 62 years. The distribution of 3 levels of probability to the diagnosis of invasive fungal infection developed among immunocompromised patients were as follows: twenty-eight (72.7%) were proven IFD, nine (23.1 %) were probable IFD, two (5.1%) were possible IFD.

The underlying diseases, in order of frequency, were as follows:
- Malignancy (n: 20, 51.2%)
- Solid organ transplantation (n:8, 20.5%)
- Chronic renal failure (n:3, 7.6%)
- Rheumatoid arthritis (n:2, 5.1%)
- Others (n:6, 15.3)

The first and the second common types of IFD were candidemia and pulmonary aspergillosis, respectively. All types of IFD were shown in detail in Figure 1. The 23 Candida blood isolates included 14 (60.8%) non-albicans spp. with a predominance of 9 (39.1%) C. glabrata.

All the patients had history of prior hospitalization with a mean of 30.6 days. Twenty patients (51.2%) have stayed in intensive care unit with a mean of 19 days. Twenty-eight patients (71.7%) have received immunosuppressive or chemotherapeutic drugs, 35 patients (89.7%) have received antibiotic treatment before IFD. Galactomannan antigen positivity was determined in 8 of 11 pulmonary aspergillosis patient and 3 of them were nonneutropenic. The overall mortality rate of 39 patients was 43.5%.

The size of the sample of data is not adequate statistically to determine the probable risk factors in the development of IFI. The most commonly prescribed antifungals to treat candidemia and pulmonary aspergillosis were caspofungin and voriconazole, respectively.

Conclusions: This study has shown risk factors to be significantly associated with the development of IFD in adults. Candidemia (2/8; 25% of SOT recipients) and pulmonary aspergillosis (6/8; 75% of SOT recipients) were the two common types of IFD in solid organ transplant recipients as in accordance with previous reports. Despite appropriate follow-up and antifungal therapy, the success of the treatment for IFD is poor. The mortality rate was found to be similar with the previous study done by Montagna MT et al.
P60
ANESTHETIC MANAGEMENT IN THE CADAVERIC LIVER AND KIDNEY TRANSPLANTATION FOR TYPE 1 PRIMARY HYPEROXALURIA: A CASE REPORT

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Introduction: Primary Hyperoxaluria (PH 1) is an autosomal recessive disorder, which is responsible for the overproduction of oxalate with an incidence of 1/120000. Indications for combined liver and kidney transplantation are still debated. However combined liver and kidney transplantation is preferred in various conditions including primary hyperoxaluria, liver based metabolic abnormalities affecting the kidney and structural diseases affecting both liver and kidney such as congenital hepatic fibrosis and polycystic kidney disease. Comparing the combined liver and kidney transplantation rejection of both liver and kidney allograft were found lower.

Case: In this report, we present the anesthetic management of a 22 year-old patient having type I primary hyperoxaluria who had cadaveric liver and kidney transplantation.

Conclusions: Using the proper anesthetic management the probable increased complications can be prevented in combined liver and kidney transplantation.

P61
PERIOPERATIVE CHARACTERISTICS OF SIBLINGS UNDERGOING LIVER OR KIDNEY TRANSPLANTATION

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Introduction: Etiologies for chronic liver and kidney failure may vary and sometimes more than one family member may be affected due to varying etiologies. Furthermore more than one family member may require transplantation which is the curative therapy for these diseases. The aim of this study was to show the similarities or differences between perioperative characteristics of siblings undergoing liver or kidney transplantation (LT, KT).

Materials and Methods: The records of 6 pairs of siblings who underwent LT and 4 pairs of siblings who underwent KT in Baskent University Hospital between 1989-2013 were retrospectively analyzed. Collected data included demographic features; co-morbidities; etiology of the liver and kidney failure; perioperative laboratory values; intraoperative hemodynamic parameters; use and volume of crystalloids, colloids, blood products, cell saver system, and albumin; duration of anesthesia, and urine output; and postoperative follow up data. Collected data for each pair of siblings were set as related samples and Wicoxon or McNemar tests were used to compare these data.

Results: The mean age of 6 pairs of siblings who underwent LT was 16.3±12.2 years. All 12 patients had Child B cirrhosis and with a mean of 7.8±3.9 years of disease process. There were no significant differences between siblings who underwent LT with respect to intraoperative blood product transfusion, crystalloid and colloid fluid replacements, hypotension frequency, blood gas analyses, urinary output, duration of unhepatic phase, inotropic agent administration, postoperative laboratory values, urinary output, need for mechanical ventilation and vasopressors, occurrence of acute renal failure and infections, and duration of ICU stay (p>0.05). The mean age and duration of renal insufficiency of 4 pair of siblings who underwent KT were 27.9±6.8 years and 4.5±4.9 years, respectively. There were no significant differences between siblings who underwent KT with respect to intraoperative crystalloid and colloid fluid administration, duration of anesthesia, intraoperative mannitol and furosemide administration, and postoperative laboratory values (p>0.05).

Conclusions: Our results demonstrated that six pairs of siblings who underwent LT and 4 pairs of siblings who underwent KT in our cohort of LT and KT patients had similar perioperative characteristics.
P62 LATE ONSET DRUG INDUCED CHOLESTASIS IN A LIVING-RELATED LIVER TRANSPLANTATION DONOR TO SON WITH PROGRESSIVE FAMILIAL INTRAHEPATIC CHOLESTASIS

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Introduction: We aimed to present a rare case of progressive familial intrahepatic cholestasis (PFIC) family. The mother, who was living-related liver transplantation donor to the affected son, developed severe cholestasis 9 years after transplantation.

Materials and Methods: A 34 years old female was living-related liver transplantation donor to her PFIC son 9 years ago. She was evaluated for development of severe cholestasis after use of oral contraceptive drug. She had jaundice, pruritus and increased bilirubin levels together with gamma glutamyl transferase and alkaline phosphatase levels. Liver biopsy revealed findings consistent with intrahepatic cholestasis. Despite follow up and cessation of any medication, total bilirubin continuously increased to a level of 20 mg/dl with intractable pruritus. A total of 9 plasmapheresis sessions were performed and she was started ursodeoxycholic acid (13 mg/kg/day) and cholestyramine (4 g tid).

Results: The clinical and laboratory picture has dramatically responded to cessation of oral contraceptive, plasmapheresis and drug treatment. The normalization of cholestasis occurred in 3 months (see Figure) and she recovered uneventfully. The genetic analysis of the whole family revealed that both parents were heterozygous for c.124G>A in ABCB11 and son was homozygous. These findings supported BSEP deficiency of varying degrees in the family.

Conclusions: The defective bile salt excretory system function results in wide spectrum of clinical presentations ranging from PFIC requiring liver transplantation to a late onset clinical picture as drug induced cholestasis. Our findings in this report suggest that drug induced cholestasis in a heterozygous PFIC mutation carrier is responsive to treatment and clinical picture normalizes in 3 months.

P63 SIMULTANEOUS PERCUTANEOUS LARGE PROFILE MULTIPLE PLASTIC STENTS FOR BILIARY ANASTOMOTIC STRICTURES AFTER LIVER TRANSPLANTATION

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Materials and Methods: Between 2004 and 2015, 13 patients with recurrent biliary anastomotic stenosis in whom prior balloon dilation and single plastic stent placement had failed and 22 patients with biliary anastomotic strictures with no previous intervention were included in this study. The patients were 19 females and 16 males, ages ranged from 8 to 72 years (mean age: 35.2). Percutaneous biliary drainage was performed then, 1 to 3 times, sequential dilation with conventional balloon was performed, then, two plastic stents were placed percutaneously through one tract (percutaneous tracts were between 8F to 14F). The size of the two plastic stents were 16F (n=6), 20F (n=24), 24F (n=4) and 28F (n=1).

Results: The median indwelling stent period was 5.8 months (3 months-12 months). In two patients, plastic stents were removed endoscopically at 25 days, and 3 months because of cholangitis. In 30 patients, no cholangitis or obstructions were observed and stents removed endoscopically. Stent free median follow up of these patients were 4 years.

Conclusions: Sequential percutaneous insertion of two plastic biliary stents through one percutaneous tract enables effective treatment of the anastomotic strictures that occurred after liver transplantation. This technique affords effective treatment of the anastomotic strictures that occurred after liver transplantation. This technique enables large profile internal stent placement through a single small percutaneous hole. This technique has a high success rate and decreases the number of interventions and also the cost of the procedure.
**P64**

**AWARENESS OF RESPIRATORY FAILURE CAN PREDICT EARLY POSTOPERATIVE PULMONARY COMPLICATIONS IN LIVER TRANSPLANT RECIPIENTS**

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**Introduction:** Cardiovascular and respiratory system complications are the most common causes of early mortality after liver transplantation. The aim of this study was to evaluate the etiology of respiratory failure as early postoperative pulmonary complications in liver transplant recipients.

**Materials and Methods:** In this study we evaluated patients who underwent orthotopic liver transplantation between 2001-2014 years, retrospectively. Clinical and demographic variables, pulmonary complications recorded. Postoperative oxygen saturation value was recorded within first visit and second visit following transplantation in all patients. Postoperative pulmonary complications (PPC) were also noted. The first visit was included in records within the first week, while the second visit was between 1 to 4 weeks after transplantation. By pulse oximetry, an arterial oxygen saturation value below 90% in room air at least 1 day was considered as medical significant respiratory failure.

**Results:** A total number of 204 (148 men, 56 women) adult liver transplantation recipients (cadaveric:46, living donor:158) were recruited. The mean age was 43.04 ± 13.06 years. PPC were defined as pleural effusion accompanied by atelectasis (47.1%), only atelectasis (17.2%), only pleural effusion (10.3%), acute respiratory distress syndrome (2%), pneumonia accompanied by atelectasis (1%), pneumonia accompanied by pleural effusion (1%), pneumonia (0.5%) in 161(79%) patients following the first week after transplantation. The most common pulmonary complications within 4 weeks after transplantation were atelectasis associated with pleural effusion (12.3%), pneumonia (12.3%) and pleural effusion. Respiratory failure developed in all patients within first week, while in 92 (45.1%) of the patients during 4 weeks after transplantation. The most common causes of respiratory failure were atelectasis in 35 (17.2%), atelectasis accompanied pleural effusion in 96 (47.1%) of the patients within first week after transplantation. Acute respiratory distress syndrome was diagnosed as the cause of respiratory failure in four cases. Pneumonia was the most common cause of respiratory failure (n: 25/161, 25.3%) within four weeks after transplantation. The other causes were atelectasis accompanied pleural effusion (24.2%), pleural effusion (23.2%), pneumonia accompanied by effusion and atelectasis (15.2%), pulmonary embolism (3.0%), and pneumothorax (2.0%). No etiology was detected for respiratory failure in 97 of those patients.

The mortality rate was 6.4% within first visit and 8.7% within second visit in patients with respiratory failure.

**Conclusions:** The present study demonstrates that respiratory failure could be a finding of pneumonia, atelectasis, and pleural effusion within first month after liver transplantation. Early pulmonary examination and diagnosis and treatment can improve the survival rate in these patients.

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**P65**

**PULMONARY HYPERTENSION IMPROVES FOLLOWING ORTHOTOPIC LIVER TRANSPLANTATION IN PATIENTS WITH CHRONIC LIVER DISEASE**

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**Introduction:** Pulmonary hypertension (PHT) is a common finding in patients with chronic liver disease and it has prognostic significance. We determined the prevalence and severity of pulmonary hypertension in patients undergoing orthotopic liver transplantation (OLT). We aimed to evaluate the effect of transplantation on pulmonary hypertension.

**Materials and Methods:** The records of adult patients with chronic liver disease who underwent OLT at our center between 2004-2015 were retrospectively evaluated. Clinical and demographic variables, laboratory data were noted. Transthoracic Doppler echocardiography reports were obtained. Systolic pulmonary artery pressure (PAP) was calculated using continuous wave Doppler echocardiography. Pulmonary hypertension was defined as systolic PAP ≥30 mmHg. Among 208 adult patients who underwent OLT 203 having Doppler echocardiographic examination were enrolled in the analyses.

**Results:** The mean age was 42.1 ± 14.1 (range 16-67) years and 143 (70.4%) were males. On preoperative assessment PHT was identified in 47 (23.2%) patients. In 10 of these patients systolic PAP was above 50 mmHg. Compared to preoperative values a significant reduction in mean values of systolic PAP was observed postoperatively (46.8 ± 8.4 mmHg vs 39.3 ± 13.3 mmHg, P=0.007).

**Conclusions:** The findings of this study indicate that PHT is a common finding in adult chronic liver disease patients undergoing OLT. A significant improvement occurs in systolic PAP values following the transplant operation.
Concerning the common prevalence and the prognostic importance of PHT, all the patients with chronic liver disease should be evaluated with transthoracic Doppler echocardiography prior to transplant.

**P66**

**RESULTS OF LIVER TRANSPLANTATION IN A NEWLY STARTED PROGRAM**

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**Introduction:** Liver transplantation (LT) is the only viable option for patients with end-stage liver disease (ESLD). Kazakhstan is a country experiencing high need in LT with over 1000 patients with ESLD.

**Materials and Methods:** this analysis represents results of DDLT and LDLT, performed in our clinic since the start of LT program from February 2013 to December 2014. Out of 7 patients, 3 received DDLT, 4 LDLT. Six out of 7 transplanted patients were adults; remaining pediatric recipient, who was excluded from this analysis, was 7 years old.

**Results:** In DDLT group, the median age was 52 [range 16-55], BMI 25.2 [range 25.1-29.3], and they had lower median MELD scores of 9.11 [range 6.65-20], LT at suboptimal MELD values were performed due to resistant ascites in one patient and repeated episodes of variceal bleeding in another patient (table 1). The most prevalent cause of ESLD in DDLT group was autoimmune liver disease: 2 recipients had primary biliary cirrhosis and the remaining recipient had cirrhosis due to autoimmune hepatitis. The mean cold ischemic time for DDLT group was more than 6 hours. The cadaveric donors’ median age was 45 years, mean cold ischemic time for DDLT group was more than an hour with mean value of 0.43 [SD 0.15], secondary ischemic time mean of 63.75 min [SD 8.66]. One recipient succumbed during early post-operative period due to hemorrhage shock due to initial poor condition of v.portae despite of the caveno-plasty.

**Conclusions:** The cumulative survival was 66.7% for both groups. The longest follow-up till now accounts for 25 months, with no episodes of rejection observed. Our analysis demonstrates comparable results of LDLT and DDLT and the necessity of timely diagnosis of short-term surgical complications, which account for mortality cases in this series.

<table>
<thead>
<tr>
<th>Parameters characteristics:</th>
<th>LDLT (n=3)</th>
<th>DDLT (n= 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, median (range), y</td>
<td>47 [43-48]</td>
<td>52 [16-55]</td>
</tr>
<tr>
<td>BMI, median (range), kg/m²</td>
<td>25.2 [25.1-29.3]</td>
<td>25.46 [20.4-30.2]</td>
</tr>
<tr>
<td>MELD, median (range)</td>
<td>17 [14-20]</td>
<td>9.11 [6.65-20]</td>
</tr>
<tr>
<td>Cold ischemia time, mean (SD), h</td>
<td>0.43 [0.15]</td>
<td>6.33 [0.27]</td>
</tr>
<tr>
<td>2ndary warm ischemia time, mean (SD), min</td>
<td>63.75 [8.66]</td>
<td>66.6 [5.77]</td>
</tr>
</tbody>
</table>

**Table. Overall Characteristics of Recipients**

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**LIVER STIFFNESS MEASUREMENT USING ACOUSTIC RADIATION FORCE IMPULSE (ARFI) IN ORTHOTOPIC LIVER TRANSPLANTATION PATIENTS: PRELIMINARY RESULTS**

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**Introduction:** Acoustic Radiation Force Impulse (ARFI, Siemens) is a new technology to measure liver stiffness. This technique allows the assessment of liver fibrosis. The aim of this study was to evaluate the diagnostic efficiency of the ARFI technology of the assessment of fibrosis in orthotopic transplanted liver and to compare with pathological results.

**Materials and Methods:** We enrolled 25 orthotopic liver transplantation patients whose biopsy decision has been made clinically for evaluating cause and severity of fibrosis, prospectively. ARFI elastographic measurements were applied before the biopsy or within three days after the biopsy, by two radiologists. The fibrosis stage was determined by pathologist according to the modified Ishak classification. The measurements of ARFI sonoeLASTography and the results of pathology were compared.

**Results:** A total of 25 biopsies, 4 of fibrosis score were evaluated as 0 (F0), 16 of fibrosis score were evaluated as 1 (F1), 4 of fibrosis score were evaluated as 2 (F2) and 4 of fibrosis score were evaluated as 3 (F3). There were no
specimens, which fibrosis score evaluated as 4, 5 or 6. The ARFI measurements mean was calculated 2.19±1.3 in F0, 1.74±0.5 in F1, 2.19±0.7 in F2 and 2.18±0.3 in F3. There were no significant correlation between the results of histological fibrosis staging and ARFI measurements in early fibrosis stage (F0, 1, 2, 3) (p>0.001).

Conclusions: ARFI is a non-invasive method for the evaluation of the severity of fibrosis. In this study, ARFI did not demonstrate a strong correlation between the liver fibrosis and the histological fibrosis staging in early fibrosis stages in orthotopic liver transplantation patients. The reason for this is thought to be due to imbalanced distribution of the histological fibrosis staging, the absence of the advanced stage of fibrosis patients and limited number of the patients. Therefore, further evaluation is planned with larger patients groups.

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MICROBIOLOGICAL ANALYSIS OF PATIENTS BEFORE AND AFTER LIVER TRANSPLANTATION
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Introduction: Chronic respiratory tract infections affect the course of the underlying disease and rehabilitation, the possibility of septic complications due to lower immune status. The aim of this study - was microbiological monitoring of patients before and after liver transplantation.

Materials and Methods: A total of 16 patients before and after liver transplantation from the department of transplantation of National Scientific Medical Research Center during 2013-2014 were included to the study. From this patients studied microbiological screening of throat, nasal swabs and sputum before and after kidney transplantation. Etiological factor considered concentration 105 CFU in 1 ml and above. The identification of isolates and antibiotic susceptibility testing were performed by Vitek 2 (bioMerieux) automated system.

Results: Microbiological screening of respiratory tract before liver transplantation showed that 10 of 16 patients (66.6%) contained isolates in a concentration of 105 CFU in 1 ml and above. One patient was not examined for microbiological screening before transplantation. Microbiological screening of throat and nasal swabs from 8 patients revealed association of isolates (53.3%). Streptococcus pneumonia was identified in throat from 6 patients of this group in a concentration of 105 - 106 CFU/ml and above. Enterococcus durans and Enterobacteraerogenes has been isolated from one patient at concentration of 105 CFU/mL. In nasal swabs from 5 patients (33.3%) was isolated Staphylococcus aureus at a concentration of 104 - 105 CFU/mL, and Staphylococcus epidermidis was isolated from 3 patients (20%). Microbiological analysis of sputum revealed isolates at etiologically concentrations only from 5 patients (33.3%), Streptococcus pneumonia from 4 patients and Enterococcus durans from one patient. The patient microbiological landscape after transplantation showed qualitative and quantitative changes of microbial spectrum of patient. The number of patients who have stood association of isolates, increased to 66.6%. Out of all the isolates found in the throat and nasal swabs were Streptococcus pneumoniae (44.4%), - by Streptococcus pyogenes (22.2%), Klebsiella pneumoniae (22.2%), Enterobacteraerogenes (11.1%). The patient who wasn't examined by microbiological screening after transplantation has begun generalized infectious process induced Pseudomonas aeruginosa, Acinetobacter baumannii, Enterobacter cloacae. Pseudomonas aeruginosa and has been isolated from the nose, throat, urine, and Pseudomonas aeruginosa - from urine, sputum, Enterobacter cloacae - throat. The other patients after transplantation were isolated Enterobacteraerogenes from the nasal swab, urine, tracheostomy at concentration of 105 - 107 CFU.

Conclusions: Streptococcus pneumoniae and Staphylococcus aureus were isolated in 66.6% cases from respiratory tract of patients before transplantation. After transplantation, there was a qualitative and quantitative change in the microbial spectrum of patient. From 40.0% patients were allocated multidrug-resistant gram-negative isolates.

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REPORT OF THREE CASES OF UREA CYCLE DEFECTS TREATED WITH LIVING RELATED LIVER TRANSPLANTATION
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Introduction: Urea cycle defects are a group of metabolic disorders caused by enzymatic disruption of urea cycle pathway that transforms nitrogen to urea for excretion from the body. Severe cases present in early infancy with life threatening metabolic decompensation, and these episodes of hyperammonemia can be fatal or result in permanent neurologic damage. Despite the progress in pharmacologic treatment long term survival is poor especially for severe cases. Liver transplantation is an alternate option for treatment, providing sufficient enzymatic activity and decreasing the risk of metabolic decompensation.

Materials and Methods: We present three cases with urea cycle defects (UCD) treated with liver transplantation (LT) in Başkent University Hospital, Ankara diagnosed as ornithine transcarbamylase (OTC) deficiency, argininosuccinate
lyase (ASL) deficiency and citrulinemia. We reviewed the demographical features, pre and postoperative maximum ammonia levels, neurologic outcome, postoperative complications and histopathologic features of the explanted liver.

**Cases:** First case was a 4 years old boy diagnosed with late onset OTC deficiency, second was a 18 months old male with ASL deficiency who are treated with living related LT from their mothers and the third case was a 5.5 months old girl diagnosed with citrulinemia treated with living related LT from her father. Maximum pretransplant ammonia levels were between 232-400 μmol/L (N : 18-72), and maximum posttransplant values were 52-94 μmol/L. Medical treatment for urea cycle disorders were discontinued for all patients after LT. First patient has motor deficit and mild mental retardation, second and third patients have completely normal motor and mental skills; after 57, 12 and 10 months posttransplantation respectively. Hepatic artery thrombosis in the first, intraabdominal infection in the second and cerebellar infarct in the third patient were early postoperative complications. Histopathological changes in 2 explanted livers were nonspecific. The patient with ASL deficiency had porto-portal fibrosis and nodule formation.

**Conclusions:** LT is a life saving procedure for UCDs with high survival rates. Proper timing for transplantation is important since high ammonia levels may result in permanent neurologic damage, but younger age may increase posttransplant morbidity on the other hand. Living related LT could be a reasonable option for optimum timing especially for countries with low organ donation rate.

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**HEPATIC ALLOGRAFT SALVAGE IN LDLT AFTER EARLY HAT BY COMBINED SURGICAL AND ANGIOGRAPHIC TECHNIQUES**


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**Introduction:** Salvage of partial liver allograft complicated by early Hepatic Artery Thrombosis by combined surgical thrombectomy and angiographic thrombolysis techniques.

**Case Report:** Living related liver transplantation was performed by the department of hepatopancreatobiliary surgery and liver transplantation in city clinical hospital №7 Almaty city on 16 December 2014. Over a period of 18 months 7 liver transplantations were performed. 6 were living related and one was deceased donor. The survival rate is 100%. However the sixth liver transplantation in post-transplant period was complicated by hepatic artery thrombosis (HAT) in the early post operative period. The patient was a 51 year-old female with decompensated chronic liver disease secondary to overlap syndrome with CTP score of 10 and MELD score of 15. She also had hypothyroidism and diabetes mellitus. She underwent living donor liver transplantation with modified right lobe graft on 16 Dec 2014. The surgery was uneventful. On POD 4 routine Doppler revealed non-visualization of hepatic artery flow. Immediate CTA confirmed the diagnosis of HAT. Within 2 hours of confirming the diagnosis the patient was taken to the operation room. Surgical thrombectomy was done and graft was revascularised with right gastroepiploic artery. Postoperatively the patient was heparinised. On POD 7 patient developed hemorrhage which was evident as hemorrhagic drains and fall in hemoglobin. Hence heparin was stopped and low platelets were corrected with platelet transfusion. This led to the thrombosis of hepatic artery again on POD 7. This time patient was submitted for angiographic thromboilysis and hepatica artery was successfully revascularised.post procedure patient was heparinised again. However, on POD-9 patient again developed hemorrhage in the abdominal drains. This was once again managed by stopping the heparin and correcting the platelets. Within 6 hrs of stopping the heparin again developed recurrent HAT. The patient was again managed with angiographic thrombolysis. The procedure was successful and uneventful.

**Results:** The patient had prolonged recovery in the form of large volume ascites which was appropriately managed. Patient was finally discharged on 35th POD with normal Liver function tests. At 3 months follow up she is doing well and graft function is good.

**Figure.**
THE EVALUATION OF END STAGE LIVER DISEASE IN PATIENTS HOSPITALIZED DUE TO SPONTANEOUS BACTERIAL PERITONITIS

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Introduction: Spontaneous bacterial peritonitis (SBP) is diagnosed by ascitic neutrophil count 250/mm³ or more in the absence of other cause of intraabdominal infection. SBP is the most common type of infection in hospitalized patients with cirrhosis. Parameters that can be used to predict mortality in SBP cases are not known and untreated SBP have a %50 mortality rate. We aimed to analyze the contribution of factors (including proton pump inhibitor use and routine albumin infusions) that may effect the course of SBP in terms of complications and mortality.

Materials and Methods: This is a retrospective study evaluating patients with SBP diagnosis from 1996 to 2013. Twenty nine patients (72% men, mean age: 46) on the waiting list of cadaveric liver transplatation were included in the study.

Results: Child-Pugh classification found that 55% of patients were Child-Pugh class C and patients had a mean MELD score of 21.5. SBP prophylaxis was given to %34.5 of patients while PPI treatment was observed in 72.4% at the time of SBP diagnosis. During SBP treatment, 82.8% of all patients received intravenous albumin therapy which had no effect on overall mortality. None of the patients with Child-Pugh class A was lost in contrast to 81.3% mortality rate in patients with Child-Pugh class C. The analysis of the factors resulted that chronic renal failure, liver transplantation and presence of hepatocellular carcinoma had no effect on mortality due to SBP.

Conclusions: Spontaneous bacterial peritonitis develops mostly in end-stage cirrhosis. Child-Pugh class C patients with might not benefit from albumin infusions and prophylactic antibiotic use since they have no effect on mortality rate due to SBP.

ORTOTOPIC HEART TRANSPLANTATION: THE NRCSC EXPERIENCE

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Introduction: Cardiac transplantation is a treatment for many patients with end-stage heart failure (HF) who remain symptomatic despite optimal medical therapy. A one-year survival rate after heart transplantation (HT) is getting close to 90%, a three-year survival - to 80%, a twenty-year survival – to 25%. Demand for HT in Kazakhstan is 10 transplantsations per 1 million people (100-150 transplants per year).

Materials and Methods: Retrospective single-centre analysis of post-transplant outcome of clinical and paraclinical data. From August 2012 to March 2015, 14 HT were performed. 8 (57.1%) patients suffered dilated cardiomyopathy, 2 (14.3%) ischemic cardiomyopathy, 3 (21.4%) hypertensive cardiomyopathy, 1 (7.2%) arrhythmogenic cardiomyopathy. Mean donor age was 46.8±12.9. Mean recipient age 38.5±13.7. 3 patients were listed as UNOS status IA, 2 patients as IB, and 9 patients as II.

Results: Three (21.4%) patients had circulatory mechanical support as bridge to transplant. Donor heart implantation performed using a bicaval technique. Duration of graft ischemia was 68.7±24.5 min, cardiopulmonary bypass time was 242.4±75.3 (140–366) min, surgery duration was 375.1±165.4 (140–366) min. Venoarterial extracorporeal membrane oxygenation (ECMO) was used in 10 cases of unstable hemodynamics. Renal failure, which required extracorporeal treatment (hemodiafiltration), occurred in one case. No acute rejection reaction occurred during hospital period. Mean post-transplant ventilation support time was 129.5 hours. ICU length of stay was 16.7 days. Hospital length of stay was 32.9 days. 30-day survival was 100%. After HT all patients received immunosuppressive therapy, which included ATG, tacrolimus (prograf), methylprednisolone. Monitoring of the therapy was based on target concentration of prograf (10-15 ng/mL), changes in WBC, platelets levels and endomyocardial biopsy data. There were 2 deaths during the late post-operative period (at post-op day 101 and 255) due to sepsis and anaphylactic shock respectively. In the early and late post-operative period there was no graft dysfunction.

Conclusions: Further monitoring and evaluation of HT results of such category of patients is required. Accordingly, the following conclusions can be made:

1. HT is the most efficient and reproducible method for treatment of patients with end-stage HF.
2. There are risk factors of hospital mortality: use of circulatory support before HT (recipients with IA status); intravenous infusion of inotropes (IB status); cardiopulmonary bypass time and donor heart anoxia.

3. Based on the analysis of results of performed surgeries it is possible to perform HT at patients with extremely severe condition. However, only early post-operative period has been analyzed. Further monitoring and evaluation of the HT results in this category of patients is required.

4. Optimization of outcomes of HT is possible at maximum reduction of graft ischemia and bypass time, which is achieved by a perfect coordination between recovery and transplant teams.

<table>
<thead>
<tr>
<th>Complications</th>
<th>1 month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory failure</td>
<td>2</td>
</tr>
<tr>
<td>Pneumothorax</td>
<td>2</td>
</tr>
<tr>
<td>Bleeding (required resternotomy, revision)</td>
<td>7</td>
</tr>
<tr>
<td>Renal failure</td>
<td>1</td>
</tr>
<tr>
<td>Sepsis</td>
<td>-</td>
</tr>
<tr>
<td>Pericardial effusion</td>
<td>3</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>3</td>
</tr>
</tbody>
</table>

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**DO THE LEFT VENTRICULAR ASSIST DEVICES HAVE AN EFFECT ON RED CELL DISTRIBUTION WIDTH**

Özgur Eseroy, Bahadır Gültekin, Murat Özkan, İlknur Akkaya, Sevi Umaroğlu, Atila Sezgin
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**Introduction:** Red cell distribution width (RDW) is a measure of the variability in the size of circulating erythrocytes, is calculated by automated blood cell counters as part of the routine blood cell count analysis. We intended to show if the continuous flow left ventricular assist devices (CF-LVAD) have an effect on RDW.

**Materials and Methods:** Our survey covered 16 of 24 patients who had Heartware (HVAD; Heartware Inc, Framingham, MA) CF-LVAD between April 2012 and February 2015. Their mean age was 46.6. We compared their erythrocyte, leucocyte, platelet counts and hemoglobin, hematocrit, mean corpuscular volume (MCV) and RDW values in preoperative stage and in the sixth month.

**Results:** Hemoglobin, hematocrit and MCV values are decreased significantly (p=0.008, p=0.027, p=0.003 respectively). But no significant change was observed in RDW values.

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**OBSTRUCTION IN THE OUTFLOW GRAFT OF THE LEFT VENTRICULAR ASSIST DEVICE**

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**Introduction:** The left ventricular assist devices (LVAD) are increasingly used either for permanent long term therapy or bridge to transplantation in the end stage heart failure population. Recently new generation continuous flow devices have better clinical outcomes. Despite of this progress, complications can occur in long term follow up. Outflow graft occlusion is one of them.

**Case:** One of our LVAD patients developed outflow graft occlusion. We discuss this rare complication in the etiological, diagnosis and treatment strategy aspects.

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**CARDIAC SURGERY COMBINED WITH LEFT VENTRICULAR ASSIST DEVICE IMPLANTATION IN A COMPLICATED PATIENT**

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**Introduction:** The surgical treatment of dissection of the ascending aorta in a cardiac transplantation candidate is very risky and controversial. Here we present the combined surgical procedure and the result of such a patient. The surgery aimed to be able to eliminate the risk of rupture of the large dissecting aneurysm and a bridge to heart transplantation.

**Case:** The fifty year-old patient had aortic valve replacement (AVR) previously. He had severe left ventricular dysfunction and the dissected aortic aneurysm detected. The patient was taken to the cardiac transplantation list. In order to bridge to transplantation, left ventricular assist device (LVAD) was implanted, the old mechanical aortic valve simultaneously changed with biological valve and the supracoronary graft interposition was performed for dissecting ascending aortic aneurysm. The outflow graft of assist device was anastomosed end-to-side fashion to the graft at the ascending aortic position.

The patient was discharged on the 14th postoperative day. He was followed without problem up to two years on the elective heart recipient list.
**Conclusions:** Cardiac surgery combined with LVAD implantation reduces the existing risk of death of the patient. This provides the chance to be followed as an outpatient manner and wait in cardiac transplant list electively.

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**THE PREVALENCE, ETIOLOGY AND THERAPY OF RESPIRATORY FAILURE FOLLOWING ORTHOTOPIC HEART TRANSPLANTATION**

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**Introduction:** Heart transplantation is the gold standard therapy for end stage heart failure. Respiratory failure following heart transplantation may be a serious complication. Pulmonary complications, pulmonary hypertension, allograft failure/rejection, structural heart defects in the donor heart are among the causes of hypoxemia in the postoperative period. In this study we aimed to evaluate prevalence of hypoxemia, respiratory failure in patients undergoing orthotopic heart transplantation (OHT).

**Materials and Methods:** The records of 45 patients who underwent OHT at our center were retrospectively evaluated. Clinical and demographic variables, laboratory data were noted. Oxygen saturation values of patients in the first week and first month postoperatively were obtained. Respiratory failure was defined as an arterial oxygen saturation value below 90% in room air at least 1 day. The etiology of respiratory failure and the therapy how these patients treated were noted.

**Results:** The mean age was 35.3 ± 15.3 (range 12-61) years and 32 (71.1%) were males. Two patients had mild chronic obstructive pulmonary disease and 1 had asthma. Twenty five (55.6%) patients had history of smoking. In 9 patients respiratory insufficiency was noted on postoperative first week. With regard to etiology, 5 patients had pleural effusion, 2 had atelectasis, 1 had pneumonia and 1 had acute renal failure. Therapy was given to these patients were as follows: oxygen therapy with nasal canula/mask (n=5), CPAP (n=3) and mechanical ventilation (n=1). On postoperative first month 2 cases had respiratory failure (1 due to pleural effusion and 1 due to atelectasis).

**Conclusions:** The findings of present study indicate that respiratory failure is a common complication in the postoperative first week following OHT. Identification of the underlying cause is important for therapy. With appropriate management it can be treated successfully.

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**CATAMENIAL PNEUMOTHORAX**

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**Introduction:** The Spanish congress of the European association of pulmonologists and thoracic surgeons, held in 2009, confirmed the international classification of spontaneous pneumothorax in which catamenial (menstrual) pneumothorax was identified. In difference from usual pneumothorax, its reason is not due to bleb disease in lungs but caused by menstrual cycle in women. Etiology was partly studied and explained by several theories. By the first of them, congenital defects (holes, times) in diaphragm allows air to get into pleural space due to increased permeability of the Fallopian tubes during menstruation. By the second hypothesis, the same mechanism is considered, but it has been supposed that a time in a diaphragm can be caused by endometriosis. By the third theory, endometriosis of a pulmonary parenchyma can create leak of air during period of menstruation. By the fourth theory, significance is attached to production of F2 prostaglandin, which is a powerful broncho-and vasoconstriction agent causing ruptures of alveoli in women in the period of a menstrual cycle.

**Materials and Methods:** Two groups of patients were identified: with defect of a diaphragm and without. Existence of such defects is described in 50% of cases. Having own wide clinical experience in the field of thoracic surgery, we for the first time in practice diagnosed catamenial pneumothorax in patients with the recurrence course of the disease.

**Case:** Surgical procedure 26.07.2011: video assisted right side minithoracotomy. During operation fall of ¼ volume lung with usual pink color has been revealed; defects, pathological neoplasms on a visceral pleura has not been detected. During careful research of the basal parts of lungs, diaphragm on an internal side of a diaphragm multiple, linear fenestration were visualized, sizes 3.0*0.5 cm. Defects were covered with slime, through them the liver surface was looked. Water test showed an air in form of bubbles coming through defects of the diaphragm. Epidiaphragmatic pleura was edematous and injected by vessels.

Patient E., 32 years, (citizen of Germany, and nun in the Roman Catholic Church) admitted to clinic of thoracic surgery in 22.07.2011 with complaints to cough, shortness of the breath. There were two episodes of pneumothorax on the right side according to anamnness, which were treated by Bulau drainage. Clear connection of development of pneumothorax with a menstrual cycle is been identified. At X-ray investigation partial pneumothorax on the right side is been diagnosed. Pathological shadows of the lung have not been diagnosed.

**Poster**
Taking into account multiple defects it has been decided to perform pleurodesis by using talc, after that, pleural cavity was drained. The postoperative period was uneventful. Lungs were finished, drainages were removed on the 3rd days, patient was discharged on 6th day after treatment.

Conclusions: Thus, it is necessary to remember that recurrent pneumothorax in women, developing in the period of a mensis is catamenial pneumothorax, which has its own features of pathogenesis and demands different diagnostic approach and treatment.

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PREDICTIVE VALUE OF HEMATOLOGIC PARAMETERS TO DETECT ASYMPTOMATIC REJECTION AFTER HEART TRANSPLANTATION: FIRST RESULTS
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Introduction: Hematologic parameters such as mean platelet volume (MPV), red cell distribution width (RDW), and neutrophil to lymphocyte ratio (NLR) have prognostic value in multiple cardiac conditions like stable angina pectoris; acute coronary syndromes and heart failure. But there are no previous studies evaluating the association between hematologic parameters and asymptomatic rejection after heart transplantation. We aimed to evaluate the role of hematologic parameters to detect asymptomatic rejection after heart transplantation.

Materials and Methods: We evaluated medical records of 47 adult patients who underwent orthotopic heart transplantation between 25.02.2005 and 06.07.2014 in our hospital, retrospectively.

Hematologic parameters before each biopsy were noted. Two groups were created according to result of biopsy: rejection or no-rejection.

Results: Four patients who were died in 1st month because of early complications were excluded. We evaluated 422 endomyocardial biopsy results of 43 adult patients (mean age 43.4±11.4 and 14 female). Mean follow up period was 33 months. A total of 109 biopsies which were performed because of clinical suspicion of rejection were excluded. RDW levels were similar between groups (17.2±2.6 in rejection group to 17.1±2.5 in no-rejection group, p=0.856). NLR was similar between groups (7.8±2.9 in rejection group to 8.2±3.1 in no-rejection group, p=0.791) (Table 1).

Conclusions: According to our results only lower MPV levels are significantly associated with asymptomatic rejection in patients with a transplanted heart. More detailed analyses are needed to exclude effects of immunosuppressant drugs and further studies are needed to clarify exact role of hematologic parameters to detect asymptomatic rejection after heart transplantation.

Table. Comparison of Hematologic Parameters Between Groups

<table>
<thead>
<tr>
<th></th>
<th>Rejection Group (n=56)</th>
<th>No-Rejection Group (n=257)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RDW</td>
<td>17.2±2.6</td>
<td>17.1±2.5</td>
<td>0.856</td>
</tr>
<tr>
<td>MPV</td>
<td>8.3±1.3</td>
<td>8.8±1.8</td>
<td>0.037</td>
</tr>
<tr>
<td>Neutrophil</td>
<td>6.6±3.7</td>
<td>6.9±4.1</td>
<td>0.586</td>
</tr>
<tr>
<td>Lymphocyte</td>
<td>1.2±0.7</td>
<td>1.4±0.8</td>
<td>0.211</td>
</tr>
<tr>
<td>NLR</td>
<td>7.8±2.9</td>
<td>8.2±3.1</td>
<td>0.791</td>
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</tbody>
</table>

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THE ROLE OF CORONARY ANGIOGRAPHY IN DIAGNOSIS AND FOLLOW-UP OF GRAFT VASCULOPATHY IN PEDIATRIC HEART TRANSPLANT RECIPIENTS
Murat Özkan,1 Okan Yurdakök,1 Ilkay Erdoğan,2 Birgül Varan,1 Atilla Sezgin,1 Sait Aşlamaci1
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Introduction: The survival rate in pediatric heart transplantation is 90%, 80% an 60% in 1, 3 and 10 years respectively. Coronary allograft vasculopathy (CAV) is responsible for more than 50% of deaths in 3 years following transplantation, preceding acute rejection and infections. CAV is usually presented with concentric intimal hyperplasia while muscular media is preserved. The possible risk factors are male gender, advanced donor age, atherosclerosis and hypercholesterolemia, CMV and other infections, recipient age over 12, hypertension.

Materials and Methods: Thirty six pediatric heart transplantations were done in Başkent University since 2004. Mean age was 11 years.

Results: Ten years survival rate was 57%. The follow-up protocol for the recipients includes scheduled endomyocardial biopsies and coronary angiographies. According to the protocol 20 recipients were assessed with a total of 54 coronary angiographies. CAV was suspected in 6 recipients.

Conclusions: Selective coronary angiography is still the most important tool in assessing CAV, despite of its low sensitivity.
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**OUR LEFT VENTRICULAR ASSIST DEVICE RESULTS: SINGLE CENTER EXPERIENCE**

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**Background:** Recently end stage cardiac failure patients waiting for transplantation are increasing in numbers even though donor numbers remain limited. For that reason use of left ventricular assist device (LVAD) is scaling up. We are presenting our results of LVAD applications since 2012 in Baskent University Ankara hospital.

**Materials and Methods:** We evaluated 24 patients who had Heartware LVAD (HVAD: Heartware Inc, Framingham, MA) between April 2012 and February 2015 retrospectively. 2 of them are female (8.33%).

**Results:** LVAD was applied to 11 patients (45%) for ischemic cardiomyopathy, 12 patients (50%) for dilated cardiomyopathy, and one patient (4.1%) for acute myocarditis. 10 (41.6%) had assist device aiming destination therapy, the rest of the patients (n=14, 48.6%) had it for bridge to transplantation. INTERMACS score was 1 for 3 patients (12.5%), 2 for 9 patients (37.5%), 3 for 12 patients (50%). Mean follow up time was 239.8 day, mortality rate was 33.3%.

Three of the patients (12.5%) ended up with cardiac transplantation, 1 (4.1%) ended up with recovery and LVAD was extracted. Six patients had driveline infections, 3 patients had minor cerebrovascular accidents.

**Conclusions:** Use of LVAD for end stage cardiac failure patients waiting for transplantation seems to be the best possible way in the insufficient presence of cardiac donor.

**P81**

**SIMULTANEOUS CARDIOTHORACIC PROCEDURES**

A. I. Kolos, A. B. Albazarov, A. O. Seydalin, Zh. A. Dzhieshev, V. D. Dikolayev

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**Introduction:** The certain success achieved in recent years in the field of cardiac surgery created prerequisites for surgical help in patients with combined pathology. By requirements of the European association of surgeons cardiothoracic department is organized and functioning as a part of NSMC.

**Materials and Methods:** In cardiothoracic department from 2012 to 2014, 1800 procedures were performed, from them cardiac surgery procedures were 1490 (82.8%), thoracic were 310 (17.2%).

Simultaneous procedures on heart and thorax organs were made in 16 cases, (0.9%) of total number operation.

The age of patients ranged from 52 to 74 years. There were 10 men (62.5%), 6 (37.5%) women.

Patients with cardiac surgery pathology were distributed as follows: ischemic heart disease were 11 people (68.8%); acquired heart disease were 4 (25.0%); aorta aneurism was 1 (6.2%). Pathology of lungs and mediastinum were presented with: malignant tumors in 12 cases (75%), bleb lung disease in 3 cases (18.7%), echinococcosis 1 case (6.3%).

**Results:** Cardiac surgery procedures are included: coronary artery bypass shunting, aortic and mitral valve replacement, Bentall procedure. Surgical procedures on thoracic organs are included: resection, segmentectomy, excision of blebs, an echinococcectomy, resection of mediastinal tumors.

Postoperative course of all patients was without complications. Histologic research of surgical specimens from 12 cases of tumors revealed: adenocarcinoma (6), epidermoid carcinoma (4), carcinoid (1), teratosarcoma (1). In long term follow up (2 years) after procedure recurrence of tumors was not observed.

**Conclusions:** Thus, procedures for cardiology diseases and tumors of chest cavity can be done simultaneously from one sternotomy access point providing radicalism and ablastics.

**P82**

**VALVE REPAIR – “BRIDGE” TO HEART TRANSPLANTATION**

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**Introduction:** The main factor constraining further development of heart transplantation is deficiency of donor organs. Patients with the chronic heart failure (CHF) join to “waiting list” in strict accordance with selection criteria of the recipient. Potential recipient is patient with severe chronic heart failure in which all known methods of treatment were unsuccessfully used (conservative and surgical). Average life expectancy of the patient with CHF included in “waiting list” is average 1 year. It is obvious that this period is often not enough for selection of donor heart.

Due to above mentioned, it becomes actual the palliative medical approaches directed on temporary improvement of decompensated state of the patients. They are united by general concept “the bridge to transplantation” and allocate “mechanical”, “surgical” and “medicamentous” bridges. In the presented clinical example is shown successful
application of “the surgical bridge” for the patient with CHF.

Case: Patient 58 years old arrived by plane with complaints on shortness of the breath during insignificant physical activity, feeling of heartbeat, interruptions in heart work, fast fatigue, general weakness.

Patient has been ill since 2007 when interruptions of heartbeat started disturbing. Patient did not consult for medical care. In 2012 shortness of breath at physical activity has joined. In 2012 deterioration of patient state in the form of shortness of breath, edema on the lower extremities. Patient called crew of an emergency medical service. He has been hospitalized in the Kostanay Region hospital where heart valvular disease and heart rhythm disturbance as FP diagnosed. He was discharged with our recommendations. The last hospitalization was in January, 2014 in Astana. Now he hospitalized in a planned order in our department.

Echo preoperative data from 11.03.2014.: EDS 71 mm, ESS 56 mm, IVS 10 mm, PWLV 11 mm, EDV 215 ml, ESV 160 ml, EF of 22%, LV 63 mm, RV 37 mm, AB 29 mm, SV of 39 ml, AO 35 mm.


Surgical procedure to the patient on cardiopulmonary bypass was performed 20.03.2014: mitral valve repair with a SJM Saddle Ring No. 30, tricuspid valve repair with a Tailor ring of No. 35, implantation of left ventricular epicardial electrodes.

Considering initial low EF (22%), forthcoming repair of mitral valve insufficiency, expected decrease in EF after correction, high probability of technical difficulties of implantation endocardial electrodes to the left ventricle, it has been implanted constant left ventricular epicardial electrodes to the side wall. However considering increase of EF in the postoperative period up to 45%, implantation of CRT-D device was refused. Patient was examined by cardiologist. Control survey in 6 months was recommended.


The patient was discharged in a satisfactory condition on rehabilitation in department of recovery treatment.

Conclusions: Thus, repair of mitral and tricuspid valves improved pump function of heart. EF in the early postoperative period increased from 22% to 45% that was positively reflected on a subjective condition of the patient.

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BRONCHOALVEOLAR LAVAGE GALACTOMANNAN TEST RESULTS AMONG SOLID ORGAN TRANSPLANT RECIPIENTS: EXPERIENCE FROM BAŞKENT UNIVERSITY

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Introduction: The aim of this study was to evaluate our experience with galactomannan (GM) test results in bronchoalveolar lavage (BAL) samples at the Ankara Hospital of Başkent University in the previous four years.

Materials and Methods: This retrospective descriptive study was conducted at the Ankara Hospital of Başkent University, a 288-bed, tertiary hospital in the capital city of Turkey. A total of 44 solid organ transplant recipients underwent 64 bronchoscopy procedures in the period between March 1, 2011 and March 1, 2015. BAL GM was tested out of 50 bronchoscopies among 37 recipients during that time. Bronchoscopies done in a month were accepted as one bronchoscopy. As a result, 46 bronchoscopies with BAL GM results were examined. The aim of this study was to evaluate our experience with galactomannan (GM) test results in bronchoalveolar lavage (BAL) samples at the Ankara Hospital of Başkent University in the previous four years.

Results: A total of 46 BAL samples from 37 recipients (28 men, 9 women; median age 44 years; range, 20-67 years) were included. The distribution of solid organ transplantation recipients were as renal (29/37, 78%), liver (2/37, 5%) and heart (6/37, 16%). The 14 of 46 (30%) BAL samples with GM test were obtained between 1-12 months after transplantation, whereas 32 samples (70%) were obtained in the late phase after transplantation. All patients had both computed tomography and clinical findings compatible with invasive pulmonary aspergillosis. Twenty one recipients had at least one BAL GM result of >0.5; nine of them had BAL GM results of >1; seven of them had BAL GM result >3 (range, 0.09-10). Only four of 21 recipients with positive BAL GM had Aspergillus spp. growth on their BAL culture. Two patients had culture positivity although...
their BAL GM test results were negative. Penicillium was grown in one patient with BAL GM positivity.

Appropriate antifungal therapy started promptly to all 37 patients with the suspicion of aspergillosis. However, mortality was seen among five recipients in the earlier period of bronchoscopy despite therapy. BAL GM test positivity was detected only in two of five exitus patients.

Conclusions: The diagnosis of invasive pulmonary aspergillosis in recipients of solid organ transplantation is very difficult. The BAL GM test results seem to be very promising and helpful in their diagnosis. The prognosis of invasive pulmonary aspergillosis in the recipients of solid organ transplantation with prompt antifungal therapy with the aid of early bronchoscopy and early BAL GM positive results is better.

P84
THE VISUAL AND REFRACTIVE OUTCOME OF COMBINED PENETRATING KERATOPLASTY, CATARACT EXTRACTION, AND INTRAOCULAR LENS INSERTION

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Introduction: The aim of this study was to investigate the visual and refractive outcome of combined penetrating keratoplasty, cataract extraction, and intraocular lens implantation (triple procedure).

Materials and Methods: The records of 116 patients who had undergone a triple procedure between January 2010 and March 2013 were analyzed retrospectively. All patients had a minimum follow-up duration of one year. Graft survival, best-corrected visual acuity (BCVA), spherical equivalent, and cylindrical error at the postoperative sixth month and first year were recorded.

Results: The mean age of the patients was 54±13 years and the female/male ratio was 1.45/1. At 6 months after triple procedure surgery, 72% of eyes achieved BCVA of greater than or equal to 5/10, with 39% of eyes within±2 D of emmetropia. At the first year, 69% achieved BCVA of greater than or equal to 5/10 with 42% of eyes within±2 D of emmetropia. Mean refractive cylinder after 6 months and one year were +4.75 D (± 4.61) and +3.86 D (± 3.29), respectively. 36% of all patients had an astigmatic error greater than or equal to 5.0 D after 6 months which increased to 38%, by the first year. Mean spherical equivalent (MSE) at 6 months and 1 year after surgery were +1.85 D (± 4.45) and +0.95 D (± 3.28), respectively. The graft survival rate was 88% at 6 months and 82% at one year.

Conclusions: Although visual outcome, graft survival rates and mean postoperative spherical equivalent results are favorable in triple procedure surgery, the mean refractive cylinder appears to be high. Possible improvements in postoperative astigmatic error and refraction might be achieved with lamellar keratoplasty procedures.

P85
THE ROLE OF ACTIVATED MEDIUM IN EXPANSION OF MESENCHYMAL STEM CELLS TO APPLY IN CELL THERAPY FOR VASCULAR DISEASES

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Introduction: Mesenchymal stem cells (MSCs) are an encouraging cell group due to their ease of isolation and expansion, also their multipotency and their low immunogenicity. MSCs have tremendous potential for regenerative medicine, and have been researched for the treatment of vascular diseases, especially long healing injuries.

Materials and Methods: In our study we used three groups of patients, with diabetic foot injuries, with long healing wounds and control group. In these groups fetal mesenchymal stem cells (MSCs) isolated from fetus and autologous peripheral blood mesenchymal stem cells (PBMSCs) were used. The obtained substrates were cultured for several days in activated medium, then were administered to patients via intramuscular and overlay application to the injured area. After the manipulation of patients on the 7th, 14th day surveys were conducted according to the criteria of efficiency. On 14th day effect of the therapy was found according to the indicators of the effectiveness of the treatment.

Results: In a comparative evaluation of the effectiveness of healing terms of approach did not differ between the application of transplantation of fetal MSCs and autologous PBMSCs in patients of all groups.

Conclusions: In conclusion, considerate using the properties of MSCs and well established microenvironment would be beneficial for developing regenerative therapies for vascular diseases treatment.
**P86**

THE SEVERITY OF CONDITION AND MORTALITY OF PATIENTS WITH THE SYNDROME OF MULTIPLE ORGAN FAILURE ON A SCALE APACHE III FOR TREATMENT BY CELL MEDIATORS

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**Introduction:** Our objective was to determine the dynamics of the severity of the condition and prediction of the estimated risk of mortality (ERM) patients with multiple organ failure (MOF) using cellular mediators.

**Materials and Methods:** The study included a group of 35 patients with MOF in ages from 18 to 70 years. 17 patients of the main group received cell mediators. The severity of the condition and prognosis of hospital mortality included in the study patients was evaluated on a scale APACHE III. Inside the main group investigated patients were divided into 3 groups (moderate, severe and very severe) depending on the number of points. Assessment of the dynamics of flow MOF performed before treatment, 3-5 days and 7-10 days of treatment.

**Results:** According to the results of intragroup analysis revealed statistically significant dynamic changes in the main group for the subgroup of moderate severity. Decrease in the average scores in the subgroup indicates positive patient outcomes. Comparison between subgroups and control group showed no statistical differences in the dynamics of APACHE III. The exceptions were two subgroups moderate groups where there was a statistically significant difference in the initial state - prior to treatment. This is due to the small sample of patients, where the average score was higher APACHE III in the study group than in the control. At subsequent stages of observation for 3-5 and 7-10 day these differences offset due to the patients. The dynamics of the estimated risk of death in 1 and 2 subgroup of the main group shows a statistically significant decrease of this indicator.

**Conclusions:** The use of cell mediators may be considered appropriate in someone the complex therapy of patients with MOF. The positive trend in the state of patients with moderate and severe degrees of severity for inclusion in the comprehensive treatment by cellular mediators.

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**P87**

INFLUENCE OF FETAL CELLS ON MULTIORGAN FAILURE SYNDROME

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National Scientific Medical Research Center, Astana, Kazakhstan

**Introduction:** Our objective was to evaluate the efficacy of fetal cells (FC) in the treatment of multiple organ failure syndrome (MOFS).

**Materials and Methods:** The study involved 20 patients aged 22-67 years with the development of MOFS. FC - biologically active substances produced by the liver from fetal tissue, were included in the complex intensive care MOFS 10 patients of the main group. MOFS dynamics was assessed by the spectrum of cytokines (IL-2, IL-6, IL-10, TNFα), the scale of SAPS II and APACHE II

**Results:** This study showed reducing the SAPS score of 36% and reduction in scores for APACHE II score of 40%. Among cytokines IL-2 was 2.5 times and the rate of IL-6 increased in 1.5 times, also we found that IL-10 increased in 15 times, but TNFα decreased in 2.6 times and duration of treatment in ICU and inpatient ward were 0.9 and 4 bed-days, respectively.

**Conclusions:** FCs activate compensatory resources damaged organs have immunocorrective action to stimulate the regulatory mechanisms of adaptation that determines their effectiveness in the treatment of MOFS in patients who are in ICU.

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**P88**

TRANSPLANTATION OF FETAL RENAL STEM CELLS IN NEPHROTIC AND NON-NEPHROTIC GLOMERULONEPHRITIS WITH STAGE 2-4 CKD: POTENTIAL EFFECT ON PROTEINURIA AND GFR

Saltanat Tuganbekova,1 Abdushappar Gaipov,2 Zaiyrkhan Turebekov,1 Samat Saparbayev,3 Galiya Shaimardanova,4 Nadezhda Popova5

Departments of 1Internal Medicine, 2Extracorporeal Hemocorrection, 3Stem Cells Technology, 4Pathology, and 5Laboratory Diagnostics, National Scientific Medical Research Center, Astana, Kazakhstan

**Introduction:** Proteinuria is a main cause of progression of glomerulosclerosis in glomerular diseases and development of ESRD is relatively rapid in nephrotic patients rather than non-nephrotic. The renal parenchyma is the less regenerable due to complex tissue consisting of renal cells.
Materials and Methods: This is a preliminary data of prospective cohort study, which included 17 patients with chronic glomerulonephritis stage 2–4 CKD, who completed three visits during the one year follow-up period. Fetal renal stem cells (multi-cells suspension) prepared from the kidney tissue of aborted fetus in 16–18 weeks of gestation. These stem cells cultivated in DMEM media and conserved in glycerin at –80°C. Injection of stem cells provided via IV infusion according to study protocol every 6 months. Routine laboratory renal tests obtained during each visits.

Results: All of two groups were comparable for age (34.6±10.1 vs 43.7±10.9 years, p=0.123), sex (p=0.639), disease duration (65.8±43.5 vs 80.0±58.6 months, p=0.385) and other clinical settings. Initial laboratory data and their changes after stem cell therapy are presented in Table 1. During the follow-up period, in I-group were observed stable hemoglobin and total protein levels but albumin and glomerular filtration rate (GFR) have decreased significantly. In the II-group, total protein with serum albumin was significantly increased and proteinuria with GFR was significantly decreased. GFR decline rate is presented in Table 2. There was no significant difference in decline of GFR between groups.

Conclusions: Treatment with fetal renal stem cells significantly decreased proteinuria in nephrotic patients, but this might be also resulted by reducing GFR. Further studies with a large number of patients and control group arm may help to achieve better results.

<table>
<thead>
<tr>
<th>Parameters Changes During Fetal Stem Cells Therapy</th>
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<tbody>
<tr>
<td><strong>I-Group (Proteinuria &lt; 3.5), n=8</strong></td>
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<td>Total protein, g/L</td>
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<td>Before FSCT</td>
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<td>P-3-1</td>
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<td><strong>Albumin, g/L</strong></td>
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<td>Before FSCT</td>
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<td>P-3-1</td>
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<td><strong>Proteinuria, g/24h</strong></td>
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<td><strong>Creatinine, mmol/L</strong></td>
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<td>Before FSCT</td>
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<td><strong>GFR, ml/min (1.73m²)</strong></td>
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<td>Before FSCT</td>
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<td><strong>Hemoglobin, g/L</strong></td>
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<td><strong>II-Group (Proteinuria &gt; 3.5), n=9</strong></td>
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<td>Total protein, g/L</td>
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**FETAL STEM CELLS TRANSPLANTATION IN PATIENTS WITH DIABETES MELLITUS**

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Introduction: Both type 1 and type 2 diabetes are characterized by a deficit on β-cell mass. Stem cells obtained from pancreas tissue of fetus might be potentially effective approach to regenerate islet cells. One of the modern therapeutic approaches in this problem is fetal stem cells transplantation (FSCT). Our aim was to identify the efficacy of FSCT in patients with DM type 1 and DM type 2.

Materials and Methods: 5 patients with DM 1 and 5 patients with DM 2 aged 18 to 56 years were performed FSCT (16–18 week of gestation) by intravenous cells infusion at 50ml/hr. The amount of fetal stem cells was not less than 5–8*10⁶. The C-peptide, glycated hemoglobin (HbA1C) before FSCT and after 3 month were analyzed.

Results: Initial laboratory data and their changes after FSCT are presented in Table 1. FSCT led to a significant increase in C-peptide level from 0.09 ± 0.01 ng/mL to 0.20 ± 0.07 ng/mL after 3 months (p < 0.008) in patients with DM 1. We didn't observe any complications of FSCT.

Conclusions: Treatment with fetal pancreas stem cells may be beneficial in both type 1 and type 2 diabetes. Further studies with a large number of patients may help to achieve better results.

Table 2. Decline rate in GFR

<table>
<thead>
<tr>
<th>Decline Rate in GFR (Mean±SD)</th>
<th>I-Group (PU &lt; 3.5)</th>
<th>II-Group (PU &gt; 3.5)</th>
<th>p Value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decline in GFR at first 6 months, ml/min/months</td>
<td>0.475±0.571</td>
<td>0.426±0.902</td>
<td>0.847</td>
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<tr>
<td>Decline in GFR at second 6 months, ml/min/months</td>
<td>0.708±1.605</td>
<td>0.87±0.754</td>
<td>0.267</td>
</tr>
<tr>
<td>Decline in GFR at 12 months, ml/min/months</td>
<td>0.592±0.74</td>
<td>0.648±0.363</td>
<td>0.267</td>
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* Nonparametric Mann-Whitney Test
**P90**

**PRELIMINARY RESULTS OF AUTOLOGOUS CELL TRANSPLANTATION IN MYASTHENIA GRAVIS TREATMENT**

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**Introduction:** Our objective was to justify the use of autologous hematopoietic stem cells of bone marrow in myasthenia gravis treatment.

**Materials and Methods:** Main group and control group of patients are observed. In main group there are 10 patients with a diagnosis of myasthenia gravis: 9 people with a generalized form and 1 person with an eye form. The control group consists of 8 people with generalized form. The median age in Main group is 49, average duration of disease is 6 years and severity of QMGS scale is 16; in Control group median severity of QMGS scale is 15.50. 5 patients from Main group have the severe IV+B form of disease, in Control group 4 patients have the same form of disease. 4 patients in the first group and 4 patients in the control group got through myasthenic crisis. 4 patients in Main group and 2 patients in Control group had myopathic syndrome. Patients in both groups get daily anticholinesterase drug (60 mg kaliminin) from 1.5 to 7.5 tablets. 4 patients in Main group and 2 patients in Control group are seronegative. The patients were initially studied in some immunological parameters: CD3+, CD4+, CD8+, SD16+, CD25+, levels of cytokines - interleukin JL6 and JL10, antibodies to acetylcholine receptors, antibodies to muscle-specific tyrosine kinase. Conducting miyeloablation before transplantation was not estimated.

**Results:** In Main group transplantation of hematopoietic cells of autologous bone marrow with intravenous drip during 3 hours along with pathogenetic therapy was held. Control group got complex pathogenetic therapy. Transplantation was well tolerated without complications. All 10 patients responded to treatment. 7 patients show improved condition, 2 of them get better significantly, with reduction in severity scale QMGS at points 9 and 11; other 3 patients after a period of improvement returned back to the original condition. 2 patients from showed the interruption of muscles atrophy progression of top extremities. The kalimin dose was reduced for 5 patients (for 2 of them it was reduced on 1.5 tablets) and 2 patients take the drug unstably now.

In Control group an improvement of 4 patients was indicated, one patient has a significant reduction to 10 points on a scale QMGS and decreasing dose on 2 tablets (earlier 5 tablets in a day); 3 patients have a lack of dynamics, 1 patient had the deterioration with stable severe condition (thymectomy is planned). Previous immune status of patients detected decreasing of the absolute amount of CD3+ T-lymphocytes and CD4+. 6 months ago after a single injection of stem cells a significant increase in the number of CD3+ T-lymphocytes (p <0.05) and CD16+ T-cells (p <0.05) was marked, and a nonsignificant increase in CD4+ was indicated. A reliable increase of CD16+ was noted in Control group.

**Conclusions:** According to the preliminary results of a single non-myoeloablative autologous stem cell transplantation safety and tolerability, clinical benefit with reduction of myasthenic appearing symptoms and myotrophy stabilization were noted. Further monitoring of clinical and immunological status of patients is required.

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**P91**

**SINGLE ANTIGEN BEADS AND C1q IMPORTANT PRE AND POST TRANSPLANTATION**

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1Department of Immunology, Başkent University Faculty of Medicine, Ankara; and 2Tissue Typing Lab, Başkent University Adana Research and Medical Center, Adana, Turkey

**Introduction:** Panel reactive antibody (PRA) is defined as the percentage of HLA antigens out of a panel reacting with patient’s serum. Patients exhibiting pre and/or post transplant anti-HLA antibodies who are at high risk for acute and chronic antibody mediated rejection. HLA-sensitized patients are more likely to remain on the kidney transplant waiting list and they have poor chance of receiving transplantation. Some of the HLA antibodies bind to C1q while some of the HLA antibodies do not. C1q is the first component of the classical pathway of complement activation and binds to the Fc region of complement fixing IgG isotypes, mainly IgG1and IgG3. These antibodies have the capacity to initiate the complement cascade. The aim of this study is to provide a transplantation change by detecting pretransplantation C1q binding assays of patients with high panel reactive antibody levels and also decide more efficient transplant protocols when C1q related de-novo antibodies detected after transplantation.

**Materials and Methods:** All the patients’ sera were evaluated before and/or post transplantation for complement dependent cytotoxicity (CDC) cross-match, flow-cytometry cross-match. Anti-HLA antibodies were studied by Luminex HLA Single Antigen Bead assays that utilize a panel of color-coded beads coated with purified single HLA antigens. The beads include class-I HLA A, B, C and class-II DR and DQ antigens. The antibody specificity and strength were analyzed with HLA Fusion software. The cutoff value for a positive DSA was a mean fluorescence intensity (MFI) ≥1000. Complement fixing HLA-specific antibodies were studied by Luminex C1q-SAB assay.
Results: PRA results not always correlated with LSA and C1q are important to detection type of rejection and treatment. Table 1 shown 7 patient results

Conclusions: C1q single antigen bead Luminex assay detect complement fixing anti-HLA antibodies. Presence of C1q-binding donor specific antibodies are associated with poor transplant outcome. Pre-transplantation LSA and C1q assay give a chance for transplantation. Post transplantation studies are important to detection type of rejection and treatment.

Table 1. Examples of Patient Results

<table>
<thead>
<tr>
<th>Patient no</th>
<th>PRA specificity</th>
<th>MFI</th>
<th>LSA</th>
<th>MFI</th>
<th>C1q</th>
<th>MFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Class-II 93%</td>
<td>2935</td>
<td>13%</td>
<td>6307</td>
<td>4%</td>
<td>4175</td>
</tr>
<tr>
<td>2</td>
<td>Class-I-II 84%/97</td>
<td>1101/6297</td>
<td>12.345</td>
<td>26%</td>
<td>23.149</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Class-I 34%</td>
<td>5108</td>
<td>11%</td>
<td>11016</td>
<td>7%</td>
<td>5244</td>
</tr>
<tr>
<td>4</td>
<td>Class-I/II 94%/3%</td>
<td>2054/</td>
<td>1% / 3%</td>
<td>7222</td>
<td>0%/0/</td>
<td>/_</td>
</tr>
<tr>
<td>5</td>
<td>Class-I/II 42%/13%</td>
<td>1516/1195</td>
<td>12.254/1746</td>
<td>4%/</td>
<td>19378/</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Class-I/II 100%/-</td>
<td>1400/-</td>
<td>68%/-</td>
<td>14402/-</td>
<td>11/-</td>
<td>23.715/-</td>
</tr>
<tr>
<td>7</td>
<td>Class-I/II %/0/-</td>
<td>3/-</td>
<td>2534/-</td>
<td>/_</td>
<td>/_</td>
<td>/_</td>
</tr>
</tbody>
</table>

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HEART FAILURE IN PATIENTS WITH END STAGE CHRONIC KIDNEY DISEASE IN PROGRAM HEMODIALYSIS THERAPY

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Introduction: Cardiovascular disease (CVD) is the major cause of death in patients with end-stage kidney disease (ESKD). The aim of the research was to study the clinical manifestations of chronic heart failure (CHF) in patients with end stage chronic kidney disease before and during program hemodialysis (PH) to assess the functional state of the heart. The detection of echocardiographic abnormalities associated with subclinical cardiac dysfunction is considered to be important.

Materials and Methods: The study involved 96 patients (52 men and 44 women) with ECKD. In all patients, clinical symptoms of CHF were evaluated. Patients underwent echocardiography and Doppler echocardiography before and during PH therapy. Systolic function was estimated by ejection fraction (EF), fractional shortening at endocardial level (endoFS) and at midwall (mwFS). EF < 50%, endoFS < 28%, and mwFS < 14% were considered indicative of LV systolic dysfunction. The maximum velocity of early diastolic filling (E), the maximum filling rate in atrial issole (A), the ratio of these velocities (E/A), isovolemic relaxation time (IVRT), deceleration time (DT) of early diastolic filling flow of the left ventricle were determined. The propagation velocity of early diastolic flow of the left ventricle (Vp) was determined with the method of color M-model Doppler echocardiography.

Results: Clinical signs of heart failure - dyspnoea - was detected in 58.1% of cases, fatigue – in 74.4%, palpitation – in 62.8%, ortopnoe – in 17.4%, edema – in 46.5%, gallop rhythm – in 7.0%, congestion in lungs – in 5.8% of cases. Concentric left ventricular hypertrophy (LVH) was diagnosed in 55 (63.95%) patients, eccentric left ventricular hypertrophy – in 13 (15.1%) cases. Reduced ejection fraction, endoFS, mwFS was detected as indicator of LV systolic dysfunction in 36 (41.9%) patients, diastolic dysfunction mainly by type of slow relaxation was detected in 66 (76.7%) cases. In patients who were on PH from 3 months to a year, the frequency of diastolic dysfunction decreased to 53.5%; in the treatment by PH which lasted 5 years, it rose to 63.95%.

Conclusions: CHF is frequently observed in patients with ECKD. Prior to PH, systolic heart function was preserved in most patients, whereas in many cases, echo-and Doppler echocardiography revealed a diastolic dysfunction of the heart. In the process of PH therapy, in the early stages of treatment indicators of the functional state of heart improved thanks to correction of metabolic disorders, nutritional status, the overload of extracellular fluid, anemia, and reduction of blood pressure in hypertension. In the later periods of treatment (after 5 years of treatment on PH) indicators of CHF gradually worsened. The results dictate the need for a regular echocardiography, and Doppler echocardiography for an early detection of systolic and diastolic dysfunction for diagnosis of chronic heart failure and correction of the revealed disorders.