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Abstracts

L1

ORGAN DONATION AND CULTURE

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Culture is the product of interaction of the institutions of the society including economy, politics, religion, family, and health care besides the agents of the society including media. The ethics in practicing organ donation and transplantation has an intimate correlation with culture that varies within the same homeland and among nations. No culture is better than the other, and no culture can judge others within the same or different political entity. However, consensus among nations worldwide for some ethical values related to organ donation processes and procedures should mandate the compliance of all nations to such values. The deceased organ donors are considered a natural resource that should be closely supervised by governments that should have complete control in order to fulfil the requirements for self-sufficiency in organ donation and transplantation. There is currently no worldwide consensus on the process of obtaining consents from families of the deceased donors (presumed consent versus explicit consent systems). There are a wide range of practices of removing disincentives worldwide by governments to encourage families to explicitly consent for the deceased organ donation due to the high variability of cultures in the different countries. This is in contrast with the presumed consent system that ignores the families altogether in case the potential donors carried driving licenses labelled as "agree to donate". In conclusion, we need to unify the systems for consents for deceased organ donation worldwide, otherwise, controversy will continue in terms of the best practices.

L2

ORGAN PROCUREMENT AMONG MUSLIMS: RELIGIOUS OR 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. Could this be due to religious ruling against donation or due to cultural factors prohibiting donation, especially after death?

Islam and transplantation

Is a dynamic religion with moves through time with *Ijtihad* and does not oppose any new developments which benefits humanity. Muslim scholars hundreds of years ago laid down the foundations of medicine and other sciences. The concept of Organ Donation for transplantation is a new one but since it helps in saving patients from death or disease is allowed as long as risk to the donor is small. Donation after death unfolds several sensitive issues.

Respecting the dead

Islam stresses respecting the dead body and avoiding any mutilation or injury. 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

Most organs are recovered after brain death which is not well accepted by many religious leaders who require cessation of heart beat before announcing death. In fact death is not defined clearly by religious authorities. If departure of soul signifies death, no one can define this moment. The body houses the

soul and when it is damaged to an extend that it can no longer accommodate the soul, it departs. Religious authorities discussed brain death in 1986 and accepted brain death to indicate end of life in a famous *Fatwa*. Many other religious bodies has since endorsed brain death to indicate end of life.

Cultural factors

Most eastern cultures are against violating sanctity of human body after death. This explains low donation rates in non-Muslim countries such as Japan. Creating a culture of organ donation requires extensive public campaigns and support of media, government and religious leaders. In addition school curricula should include promoting such culture. Over last decade deceased organ donation has been increasing in several Muslim countries by following this plan.

L3

FINANCIAL NEUTRALITY IN ORGAN DONATION

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In many countries organ donation can be a costly and burdensome undertaking for donors. While most donation-related medical expenses are covered, many donors still face lost wages, travel expenses, incidentals, and potential for future insurability problems. Despite widespread consensus that live donors (LD) should not be responsible for the costs associated with donation, little has changed to alleviate financial burdens for LDs in the last decade. To achieve this goal, the transplant community must actively pursue strategies and policies to eliminate unreimbursed out-of-pocket costs, this will also make live donation possible for people who, in the current system, cannot afford to proceed. We propose the goal of LD 'financial neutrality,' offer an operational definition, and guidance for consideration of medical care coverage, wage and other expense reimbursement. The problems associated with providing general health insurance for living donors and funeral expenses for deceased donors will also be discussed.

L4

DEVELOPING ORGAN DONATION FOR TRANSPLANTATION

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President TPM-DTI Foundation

Organ donation and transplantation is a successful treatment of the chronic disease of many organs. The main problem is the lack of organs for transplantation. The world only performs today 10% of all the transplants needed and that is because of the lack of organs and we need 10 times more. Nowadays, the leaders in organ donation are Spain, United States and some European countries which can achieve 20 to 40 donors per million people, which can perform 50 kidney transplants per million populations and around 20 livers per million population, where the new vital cycle of transplantation is well develop but donation not.

In our model to develop organ donation, we propose to create some hospital university organization, where teams of professionals dedicated are in charge of developing the problem. In Spain since 1991 until now we have increased the number of teams dedicated to donation and transplantation up to 189. The TPM, Transplant Procurement Management, mainly ICU doctors, full-time or part-time dedicated, are the responsible for that. The training of these professionals have led to an increase of the donation in many countries like Croatia, Iran, Slovenia, Thailand, Brazil, China, etc. The main purpose is to do an early referral to increase the conversion rate and to create this structure. These professionals work in DBD, DCD as well in the living donation field, being in charge of the education of other professionals, the quality assurance programs,

doing research and also calculating the cost and the resources needed for that. The conclusion is that the waiting list in many center within European countries and United States are increasing compared with the number of transplants, while in Spain our waiting list still stable for the last 20 years, with less than one year waiting lists for organs such as heart, lung, liver, pancreas or kidney. As a conclusion: organ donation is a new hospital practice independent of the sociocultural environment.

L5

THE STRATEGIC PLAN OF THE DECLARATION OF ISTANBUL CUSTODIAN GROUP

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The Declaration of Istanbul Custodian Group (DICG) will work with governments (e.g., ministries of health) and professional bodies in each of the WHO regions to implement a goal of combating organ trafficking.

The factors considered in selecting countries for involvement of the DICG are (1) an existing program that transplants organs into foreign patients and/or relies on vended organs for foreign or domestic patients, (2) growing need for, and existence of, dialysis based upon increasing rates of end-stage organ failure and growing economic development, (3) an existing relationship between the DICG and one or more transplant programs in the country, and (4) the feasibility of engaging with the country, based upon an identified champion within the country with access to government. In a country that lacks extensive transplant activity, an alternative for factors (1) and (2) would be that organs or people from the country are trafficked to other countries as a source of vended organs.

Success will be marked by (1) a legal commitment to adopt and enforce the principles espoused in the Declaration of Istanbul [2008], the WHO Guiding Principles [2010] and the 2010 Madrid Resolution [2010], and (2) substantial reduction in organ sales and elimination of transplant tourism.

The Strategic Plan of the Declaration of Istanbul Custodian Group also includes the convening of a workshop on determining proper travel for transplantation – in Madrid Spain April 2016.

The DICG Strategic Plan has two major components:

1. A Prospective Review Process of proper travel for transplantation when a patient indicates the intent to travel to a foreign destination for organ transplantation.
2. A Retrospective Process to consider when a patient returns to their native country for medical care after he/she received a transplant in a foreign destination.

L6

RECOMMENDATIONS FOR TOPICAL ANTIMICROBIALS TO PREVENT WOUND INFECTIONS

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Objectives: We examined the potential role of selective antimicrobials placed in surgical wounds to prevent the onset of surgical site infections (SSI).

Materials and Methods: At extensive search in the literature was done, accompanied by several personal studies to determine the effectiveness of topical antimicrobials in preventing SSI.

Results: Numerous studies have been done which generally show that topical antimicrobials and antibiotics are highly effective in preventing SSI. These need to be active against the invading organisms, nontoxic to tissues of the host, and generally effective with a single use. New materials which may be effective are the iodine and chlorohexidine products, generally used for skin perforation. New products, such as green tea extract, are currently under evaluation.

Conclusions: Most wounds are contaminated with organisms which can potentially cause infections.

These infections can be prevented by repeated use of antimicrobials including antibiotics. Several types of antimicrobials have been developed which are promising.

L7

GUIDING LIGHT TO TRANSPLANT MONITORING

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Pre transplant monitoring is a series of tests developed to identify immunological risk with potential impact on transplant out come to select compatible donor-recipient pairs and to guide immunosuppressive strategies. HLA are protein molecules that are located on the surface of almost all cells in the body. They play a role in recognizing cells that are your own (self) from those that are foreign (non-self). Nearly 600 different HLA molecules have been identified. Through a blood test, the laboratory determines which HLA markers are present. Tissue matching is a very complex area involving testing the similarity of certain proteins, called antigens, between the donor and recipient, which are defined through blood tests. We all have many genes, some of which determine the expression of these antigens. Antibodies against HLA molecules are formed in response to exposure to foreign HLA molecules, which can occur as a result of blood transfusion, pregnancy, or transplant. The presence of antibodies in transplant recipients specific for donor human leukocyte antigens (HLA) is associated with an increased frequency of rejection and graft loss. The methods for the detection of these antibodies are:

1. Panel reactive antibody screening (PRA) and
2. Crossmatching.

Two main methods are currently used for PRA testing:

1. The lymphocytotoxicity test where cells obtained from donors with different ethnicity and with different HLA representing most of the common alleles are incubated with the patient serum.
2. Allele specific where the HLA are isolated and characterized and used as soluble antigens with the patient serum. There are two variations of this:
   a. Qualitative (non specific) gives a positive or negative results
   b. Single allele which is quantitative and specific

Crossmatch testing prior to transplantation is now considered the most essential test. Crossmatching is a very sensitive and final test performed on a kidney donor and a particular recipient. Laboratory techniques for crossmatching have been refined and now enable scientists and physicians to define how a transplant recipient may respond to particular cells or proteins of the donor.

1. The basic crossmatch test involves a mixing of cells and serum to determine whether or not the recipient of a kidney will respond to the transplanted organ by attempting to reject it.
2. In recent years, we have applied more intricate tests and obtained more accurate results of crossmatching.
   a. The Flow Crossmatch testing, which is very sensitive but is not very specific and it is not complement dependent
   b. Virtual crossmatch which is a computer system to predict the result (no actual testing)
   c. The donor specific crossmatch which is the most specific and most sensitive.

Regardless of the PRA or the crossmatch method used the result is either is positive or negative. A positive result means that the recipient has responded to the donor and that the transplant should not be carried out. A negative means that the recipient has not responded to the donor and therefore transplantation should be safe.

L8

TOLERANCE IN SOLID ORGAN TRANSPLANTATION

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The ability to produce immunologic unresponsiveness – Immunologic Tolerance – was first demonstrated by Sir Peter Medawar and colleagues in 1953 when

they showed that inoculation of fetal mice or chick embryos with donor tissue resulted in permanent acceptance of donor skin grafts after birth or hatching. Third party grafts were rejected.

For more than 60 years since the first successful kidney transplant between identical twins (isograft) in 1954 by Murray and colleagues in Boston intense investigation has been directed toward developing the methodology to produce Clinical Tolerance in Human Solid Organ Transplantation.

In the absence of the ability to achieve Immunologic Tolerance, clinical solid organ transplantation has progressed during the past >60 years by suppressing the immune system with a myriad of immunosuppressive agents.

Achieving clinical tolerance is important because long-term renal graft survival rates have not improved with current immunosuppression and the side effects from immunosuppressive agents produce significant morbidity and adversely impact on the quality of life following transplantation. Therefore operational tolerance would potentially extend longevity by alleviating nephrotoxicity and maximizing the quality of life.

Instances of clinical operational tolerance are rare and have occurred primarily as a result of patient non-adherence. In 2010 the European Consortium for Tolerance identified 11 renal graft recipients and the American Network for Immune Tolerance identified 25 recipients who were off all immunosuppression for up 32 years.

Vigorous attempts to identify a fingerprint from these tolerant recipients that could prospectively identify recipients who could be weaned from immunosuppression with impunity have to date been unsuccessful.

The current incidence of operational tolerance following purposeful weaning in adult liver recipients is as high as 42%; whereas in pediatric recipients it is 60%. The length of time post-transplant at the time of weaning appears to be the most significant indicator of success

The newest approach to accomplish clinical operational tolerance by facilitating early weaning of immunosuppressive agents is the ex-vivo expansion of autologous regulatory “t” cells and reinfusing them in the early post-transplant period. This exciting approach is just being initiated in liver and kidney recipients.

An alternate approach to facilitate rapid discontinuation of immunosuppressive agents following transplantation is the concurrent kidney and hematopoetic cell transplantation in order to achieve temporary or persistent chimerism. Recent experience with related and unrelated live donor kidney transplantation utilizing a “facilitating” cell enriched hematopoetic stem cell transplantation is proving successful.

The ability to profile recipients in whom immunosuppression can be successfully discontinued and the availability of a sensitive and specific non-invasive test to detect the potential for graft reactivity prior to graft dysfunction would facilitate the process of inducing clinical operational tolerance in the future.

L9

EPIGENETIC MODIFICATIONS AS BIOMARKERS IN ORGAN TRANSPLANTATION

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Epigenetic modifications are changes to the genome that occur without any alteration in DNA sequence and include cytosine methylation of DNA, histone modifications, microRNA interactions, and chromatin remodeling complexes. Epigenetic modifications may exert their effect independently or complementary to genetic variants and have the potential to modify and regulate gene expression. These modifications are dynamic, potentially heritable, and can be induced by environmental stimuli or drugs. There is emerging evidence that

epigenetics play an important role in health and disease including organ transplantation. However, the impact of epigenetic modifications on the outcomes of kidney and liver transplantation is currently poorly understood and deserves further exploration.

Kidney transplantation is the best treatment option for end-stage renal disease, but allograft loss remains a significant challenge. Epigenetic modifications may influence the activation, proliferation, and differentiation of the immune cells, and therefore may have a critical role in the host immune response to the allograft and its outcome. The epigenome of the donor may also impact kidney graft survival, especially those epigenetic modifications associated with early transplant stressors (eg, cold ischemia time) and donor aging. There is evidence supporting the role of epigenetic modifications in ischemia-reperfusion injury, host immune response to the graft, and graft response to injury as potential new tools for the diagnosis and prediction of graft function, and new therapeutic targets for improving outcomes of kidney transplantation.

Similarly, in liver transplantation epigenetic modifications may also impact early injury (IRI) and outcomes. We studied 22 deceased donor LT patients with severe (SI, n=11; AST>500 IU/L) and mild (MI, n=11; AST<500 IU/L) early graft injury at 1-day post-LT. Tissue biopsies were collected at pre-implantation (L1) and at post-reperfusion (L2). Genomic DNA was extracted from pre implantation biopsies; bisulfite converted and used in Infinium 450k methylation arrays. Raw data was normalized by SWAN method and analyzed with R bioconductor. Beta scores were converted to M-values. F-test was fit for significant demethylated CpG sites ($q<0.05$). Total RNA was isolated from all biopsies, labeled and used in gene expression microarrays. Molecular pathways were evaluated by IPA tool. CpGs (Methylight) and genes (RT-PCR) were validated. Results: There was not difference between groups in demographics, graft preservation type, and cold- and warm-ischemia times. In total, 3663 CpG sites (2574 hypomethylated; 1089 hypermethylated) were significantly demethylated and mapping within genic regions. Interestingly, 2251 CpGs (92% hypomethylated, $p<0.0001$) mapped within GC-islands located at promoter regions (1971 genes) in SI grafts. Molecular pathway analysis based on CpGs methylation identified apoptosis activation signaling (TP53, BIM, others), ubiquitin protein degradation, and cell cycle regulation ($p<0.0001$). Genes with multiple hypomethylated CpGs anticipated increases in liver cell death and G1/S cell cycle check-point.. A unique significantly deregulated molecular signature (94 genes) correlating with CpG demethylation coincided with liver damage (KRT18), apoptosis and cell cycle regulation at post-reperfusion in SI grafts. Genes were validated by RT-qPCR. Conclusion: Demethylation of specific genes (cell death) may induce graft injury severity post-LT. Pathway-specific blockage and preemptive interventions may reduce injury severity.

Lecture

L10

CELL THERAPY IN SOLID ORGAN TRANSPLANTATION

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Cell Therapy in the SOT could be used in the early future for solid organ transplantation (SOT). The goal of such treatment would be first for immunomodulation therapy for SOT and secondly, it could be considered as a functioning graft (Bioengineering medicine). Before popularity of such treatment among transplant societies clarification of a series questions are necessary such as: Why such therapy is mandatory? What is the indication of such therapies? The mechanism of action/actions of such therapy? The Types of Cells and rout of actions, and the last but not least about the safety of such therapy. Our hope is to achieve a better long-term allograft survival by such treatment. We expect also the adverse effects of immunosuppressive drugs such as infections, cardiovascular disease, metabolic complications and malignancies would be decreased by such therapy. On the other hand the immunosuppressive therapies are expensive and unaffordable for a majority of population in the low-middle income countries, majority in the Middle East.

Much dissimilarity exists between immuno-modulation effect of cell therapy and immuno-suppressive drugs. First: immunoregulatory cells act when necessary; second: immunoregulatory cells act through multiple mechanisms and through many pharmacological targets; third: immunoregulatory cells are not only passive target inhibitors such as drugs, but they have active functions; fourth: cell therapy would be used only once, or perhaps a few times not forever in contrast of immunosuppressive drugs, and eventually complications of IS drugs are disappeared by this strategy. Indications of cell Therapy in SOT composed of: 1-Treatment of I/R injury. 2- Prevention of IF/TA. 3- Minimization of immune suppression. 4- Reversal or stabilization of chronic transplant inflammation and fibrosis. 5- To induce long term tolerance for SOT. Viable cells for SOT should have at least three characteristics: 1- They need to be present in peripheral blood in sufficient numbers to be isolated. 2- They need to be expandable in vitro. 3- They need to be functionally stable.

In general, the risks associated with the intravenous administration of immunoregulatory cell products are broadly similar to those encountered with conventional blood transfusions. But In different laboratories final cell products have to undergo control quality tests before release including viability, sterility, endotoxin content, mycoplasma contamination, fluorescence-activated cell sorting (FACS) analysis, and tests to ensure genetic stability.

Many cell types is now being actively investigated as a potential cell-based immunotherapy for using in solid organ transplantation including: 1- Mesenchymal stromal cells (MSCs) , 2- Regulatory macrophages (Mreg), 3- Tolerogenic dendritic cells (tol DCs), 4- Tregs (nTregs,IL-10-producing Tr1 cells), and, 5- B regulatory cells. Efficacy and safety of each group of cells should be clarified before widespread clinical usages.

L11

CAN WE ATTENUATE TRANSPLANT INJURY BY CALCINEURIN INHIBITORS MINIMIZATION?

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Calcineurin inhibitors (CNIs) are associated with nephrotoxicity (NT). CNI sparing regimens yielded conflicting short and long-term results that were sanctioned by greater rates of acute rejection and in some, evidence of chronic transplant glomerulopathy. Mammalian target of rapamycin inhibitors (mTOR-I) such as Rapamycin and more recently Everolimus substituted CNI in many of these minimization strategies. Despite their acclaimed renal safety profile, several lines of evidence are emerging on their potential NT effect. Predisposing conditions for CNI and mTOR-I NT involve a complex interplay between several environmental and genetic mutations in the donor-recipient pair. Both NT may be enhanced by the CNI + mTOR-I combination and pharmacodynamics' interactions that are predominantly related to a simultaneous increase in local tissue exposure. They may occur within adequate dosage and therapeutic blood levels of both classes of drugs. This explains the occurrence of NT in some but not all cases and the consequent difficulties in establishing clear and well-defined approaches to minimize these adverse manifestations. Potential CNI-NT reducing strategies, although not yet rigorously tested, may involve primary and secondary preventions. They may entail complete CNI avoidance, using belatacept-based regimen, as well as pharmacoadaptation. Secondary prevention implies:1-detection of early markers, yet to be identified, prompting dose reduction and early CNI withdrawal while renal damage may be reversible; 2-Intracellular drug level monitoring allowing dose reduction while maintaining optimal immuosuppression and 3- Avoidance of food and drug-drug interactions, as well as the conversion to mTOR-I in high immunological risk recipients and in those with low eGFR (<30 ml/min) and proteinuria. These proposed measures might attenuate renal transplant injury and improve long-term graft survival only in a context of multi-disciplinary

approach that specifically addresses the other causes of late renal allograft loss such as recurrent disease, chronic rejection and death with function.

L12

RECURRENT NEPHROTIC SYNDROME AFTER RENAL TRANSPLANTATION IN CHILDREN

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Background: Recurrent disease occurs in around 30% of children transplanted for steroid-resistant nephrotic syndrome. Its precipitating risk factors have rarely been studied in the Middle East. The aim of the study was to determine what characterize the post-transplant recurrence of nephrotic syndrome (NS) in Syrian children and how does it compare with the published experience from other parts of the world.

Methods: We enrolled 12 nephrotic children who received one renal allograft at our center; the mean age at transplant was 11.3 years (8.7 - 15.3). The native kidney biopsy did show focal segmental glomerulosclerosis (FSGS) in 9 out of 10 patients who underwent renal biopsy. Four patients had one or more siblings affected with NS and the remainder were labeled as sporadic cases; genetic screening for NPHS2, NPHS1, and WT1 mutations were done for 6 patients, one novel homozygous NPHS2 mutation has been identified in one patient; none of the patients has had one or both native kidneys removed prior to transplant; all cases were transplanted from living donors as follows: 7 from related donors and 5 from unrelated donors.

Results: Four patients did recur their initial disease after transplantation, hence the overall recurrence rate was 33%. (4/12); none of the recurrent patients did show an initial response to plasmapheresis therapy, however, one patient did show a complete and spontaneous remission 20 months after transplant. As expected, the patient with NPSH2 mutation didn't recur. Sporadic cases did show a risk of recurrence that is 5 times higher compared to familial cases (95%CI: 0.33-75.11; P = 0.24). Interestingly enough, all recurrent cases had received a kidney from related donor and were initially classified as sporadic cases. Though not statistically significant, the risk of recurrence from related donors is 6.75 times higher compared to that from unrelated donors (95%CI: 0.44-102.80; P=0.16). This observation may suggest that living related donor transplant is at higher risk for clinical recurrence; however, a properly designed prospective multicenter study is needed to validate this observation given the lack of prior research on the effect of living donor type on the risk of recurrence. After a mean post-transplant follow up period of 3.2 years, 6 patients were still having a well-functioning graft, 4 patients with chronic kidney disease stage 3 to 4, and 2 patients returned to dialysis, both had lost their graft due to recurrence.

Conclusions: This data suggests that living related donor grafts should be used with constraint because of the increased incidence of recurrence.

L13

ROBOT ASSISTED LIVING DONOR NEPHRECTOMY

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Because of severe donor shortage 77% of all kidney transplantations were performed from living donors in Turkey.

Following first experience of laparoscopic donor nephrectomy by Ratner el all in 1995, minimally access surgery for living kidney donors, has become standard technique for majority of centers with lower recovery time, better cosmetic results and similar graft and patient survival compared to conservative open technique.

In recent years, Robot-assisted surgery (da Vinci Robotic System, Intuitive Surgical Inc., Sunnyvale, CA) has been using more frequently in surgical field. Because of highly moveable multi wristed instruments with better motion, easy suturing capability and clear 3D visualization with active movement into the abdominal cavity.

In this descriptive analyses we examined 56 conseguative patients who underwent robot assisted living donor nephrectomy in between November 2013 and December 2015 at Gazi University Transplantation Center, Ankara Turkey.

Out of 56, thirty living donors were male and twenty-six were female. Mean age was 43 (range: 23-65). All living donors were relative to their recipients, there is no unrelated living donation in our center. One donor needed open conversion because of intraoperative bleeding. This patient also needed two units of blood transfusion. Open conventional donor nephrectomy was performed without any other complication in that case. All other 55 procedures were completed without any intraoperative complications and no perioperative blood transfusion because of surgical bleeding.

The median warm ischemia time was: 2,7 min (range: 2,1 – 5,1 min). Two patients had double ureter, three patients had double renal artery. One patient needed reoperation because of acute abdomen 36 hours after surgery. In laparoscopic examination acute appendicitis was diagnosed and laparoscopic appendectomy was performed. This patient also had uneventful postoperative period.

Median total charges for robot-assisted living donor nephrectomies were 5.457.333 TL versus 3.653.500 TL for laparoscopic cases in our institute.

Robot assisted living donor nephrectomy is a safe and effective procedure giving similar results, with the conventional laparoscopic and open surgical technique.

Few studies published in last two years about robot assisted living donor nephrectomy also showing similar results.

Robotic surgery is an evolving technique giving some advantages to the surgeon with high instrument technology and clear 3D visualization and surgeon's comfort during procedure. This technique also offers technical ease and facilitates preservation of longer length of renal artery especially in right side. Higher cost seems to be the disadvantage of the procedure. In near future prospect of more flexible and easy docking systems, robotic staplers, multi wristed instruments with energy devices and single port systems further decrease disadvantages.

L14

AUTO IMMUNE DISTURBANCES LEADS TO CHRONIC LIVER DISEASES (PSC, AIH, PBC AND OVERLAP SYNDROME) IN SHIRAZ TX. CENTER

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Nowadays autoimmune disorders are one of the most common causes of human being health hazards. In the field of hepatology and liver disorders, autoimmune causes are quite common and many of them lead to liver transplantation (LT). Among these disorders are primary sclerosing cholangitis (PSC), primary biliary cirrhosis (PBC), autoimmune hepatitis (AIH) and overlap syndrome. We report our experiences of LT for various liver disturbances of autoimmune etiology.

LT program began in 1992 in IRAN (Shiraz Transplant Center). Until the end of December 2015, totally 3300 LT were done at our center. Nearly one fourth of these were for diseases of autoimmune etiology (850/3300). The spectrum of autoimmune liver disorders was as follow: (PSC: 440, AUTOIMMUNE and OVERLAP syndrome: 368, PBC: 42). Nearly all LTs were performed from decease donors. The mean age of patients was 35 y/o. Ninety percent of patients were females (F/M: 9/1).

1, 5 and 10 Years survival are respectively 83% , 75% and 70%. The Most common cause of mortality

was sepsis. Other common causes of mortality were primary nonfunctioning liver, chronic rejection and vascular events. Among those PTs who discharged from hospital, the most common causes of mortality were chronic rejection and biliary complications. Our experience demonstrates, LT for autoimmune disturbances are excellent modality of treatment and superior relative to other causes of end stage liver disorders.

L15

LIVING DONOR LIVER TRANSPLANTATION IN ADULTS AND PEDIATRICS: 24 YEAR EXPERIENCE

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Lecture

Living donor liver transplantation (LDLT) has become a standard operative procedure around the world for patients with end stage liver disease in order to alleviate donor shortage. After the first successful living donor liver transplantation (LDLT) was performed in 1989 in pediatric recipient, this technique helped decreasing waiting list mortality in pediatrics together with reduced and split liver transplantation techniques. Great success of this technique in pediatrics led transplant community to utilize this technique in adult patient population. In Japan and US first adult-to-adult LDLT cases were performed in mid 1990. Today around the world many centers are performing LDLT in both adult and pediatric patients successfully.

LDLT has many advantages for recipients including, timely transplantation, graft quality, very short ischemia time and decreasing the chance of disease and tumor transmission from donor to recipient. On the other hand, donor operation subjects a healthy individual to a major surgery and consequences including major morbidities and mortality. Therefore, donor evaluation, informed consent process, preventing coercion and other ethical considerations are important topics to discuss with potential donor and his/her family members. This process requires multidisciplinary team approach and should be overseen by an independent donor advocacy team. Independent donor advocacy team (IDAT) members consist of a dedicated living donor coordinator, a social worker and a psychologist. IDAT team members should never involve with pretransplant recipient care in order to assure that their decision-making is not affected by degree of recipient illness or sympathy to recipient. In LDLT, donor safety is the utmost priority.

Donor evaluation includes medical and surgical evaluation, laboratory tests, imaging studies, cardiac evaluation and anesthesia consultation as well as evaluation by IDAT members.

In LDLT graft recipient weight ratio (GRWR) calculation is important for the success of operation in recipient. GRWR of ≥ 0.8 is considered a standard to prevent small for size syndrome (SFSS). SFSS is considered to be multifactorial including GRWR, degree of portal pressure, degree of recipient illness, drainage of out flow vessels. Paying attention to all details above it is possible to have successful LDLT even with GRWR of 0.4.

In summary, donor safety is of utmost importance and donor advocacy must drive the process. Every effort should be given to assure the donor safety in LDLT. In LDLT, both donor and recipient operations require expertise in liver transplantation and hepatobiliary surgery. Graft size is the major limiting factor in the expansion of LDLT. Although increasing the graft volume is the simple solution to avoid SFSS, it increases the morbidity and possible mortality in the living donors. Keen understanding of portal flow hemodynamics, functional graft size concept, importance of quality of the donor liver in terms of donor age and steatosis, recipient selection as well as ischemia time will minimize the risk of SFSS. Recipients who developed SFSS following LDLT can be managed by surgical, interventional and pharmacological manipulations/modification of the portal flow and hyperbaric oxygenation treatment. LDLT provides a critical option for patients with little practical chance of receiving a cadaver organ in timely fashion

L16

LIVER TRANSPLANTATION IN LIVER CIRRHOSIS PATIENTS WITH PORTAL VEIN THROMBOSIS

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The presence of portal vein thrombosis (PVT) is considered to be one of the risk factors that make liver transplantation (LT) in liver cirrhosis patients difficult. PVT not only leads to markedly increased collateral vessels that may result in excessive hemorrhaging during surgery, but also it leads to technical problems such as inadequate post-operative establishment of blood flow to the portal vein. Risk factors for PVT include advanced age, liver cirrhosis of known etiology, alcoholic cirrhosis, autoimmune hepatitis, hyper coagulable states and prior splenectomy. Incidence of PVT in liver cirrhosis patients has varied 2%- 26%.

Nowadays, with the development of strategies for vascularization of the portal vein of the graft and refinement of surgical techniques, LT in patients with PVT is a part of the routine in major transplant centers. Despite the improved results, this group of the patients should still be considered high risk and should be referred to centers with experience in type of complication.

The technical options for LT vary according to the patency of portal vein and that of other splanchnic veins. Removal of the clot within the portal vein by eversion thrombectomy or thrombendvenectomy, that means removal of the clot and attached intimal layer of the vein, is the reference technique. Removing maneuver may be extended to the splenic and superior mesenteric vein when needed. Portal flow is verified and an end-to-end portal anastomosis is completed. Interposition of a vascular graft should be avoided whenever possible. If portal flow remains insufficient after the clot has been removed ligation of the collateral circulation should be performed. Endovascular radiological procedures consisting of the identification and embolization of large shunts with coils have been proposed as an alternative to surgical ligation.

Thrombendvenectomy may not possible in some patients with complete PVT. When the native portal vein corresponds to a fibrotic remnant or when the thrombus involves the spleno-mesenteric confluence it may be impossible to restore adequate blood flow into the portal vein. In this situation, distal mesenteric vein can be used as the inflow vessel. Portal flow to the allograft is restored through the interposition of deceased donor iliac vein as a jump graft between the distal superior mesenteric vein and the graft portal vein.

Eventually, it has been suggested that donor's portal vein may be successfully implanted onto collateral veins.

Portal vein arterialization may help restore portal flow without overt portal hypertension. However, aneurysmal dilatation of the portal vein may be seen.

In patients with diffuse splanchnic vein thrombosis, two alternative techniques using systemic veins as the inflow vessels have been proposed; cavoportal hemitransposition and reno-portal anastomosis. These complex procedures are not together with good results.

Living donor LT may be even more difficult than deceased donor LT in patients with PVT because of very short length of the graft portal vein and cannot be procured of additional vessels for complex venous reconstruction from living donor.

Pretransplant PVT may be associated with a 50 % increase in 1 year mortality risk. Finally, the result of LT in patients with PVT will be presented in the meeting as Inonu University Liver Transplantation Institute experience.

L17

CLINICAL INDICATOR OF MICROVASCULAR INVASION IN HEPATOCELLULAR CARCINOMA: WHEN MILAN IS NOT ENOUGH

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Background:_Curative therapy for hepatocellular carcinoma (HCC) is liver transplantation. However, microvascular involvement portends a poor prognosis and it is often undetectable prior to transplantation. Furthermore, the indicators for mircrovascular involvement pre-transplant are not well established. To date, the Milan criteria and pre-transplant AFP have been our best clinical surrogates for tumor behavior and overall patient prognosis. However, Milan criteria and AFP have low accuracy in predicting microvascular invasion and therefore there remains a need to identify clinical predictors of pre-surgical microvascular involvement.

Methods: 156 liver transplants were performed for HCC at Johns Hopkins Medical Center between August 2000 and August 2013. Of these, information regarding vascular involvement was available for 130 (83%) based on pathology records. Logistic regression was used to assess the impact of Milan criteria, AFP, level of differentiation and lobar involvement on the presence of microvascular invasion on explant pathology

Results: 26 (20%) had explant microvascular involvement; 15% of these patients were outside of the Milan criteria. Multilobar tumors were present in 30% of patients with microvascular compared to 9% without microvascular involvement. In multivariable analysis, patients with multilobar involvement had 30 times greater odds of microvascular involvement controlling for Milan criteria, AFP and level of differentiation (OR=30.8; p=.02).

Conclusions: We identified multilobar involvement as a risk factor for microvascular involvement in hepatocellular carcinoma. Surprisingly, neither Milan criteria nor AFP were predictive for explant microvascular involvement in a model which includes lobar involvement. The integration of lobar involvement as a pre-operative prognosticator may serve an integral role in future clinical practice.

L18

BILIARY COMPLICATIONS AFTER LIVER TRANSPLANTATION

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Introduction: Biliary complications (BC) are the most common reason for morbidity and mortality after liver transplantation (LT). In this abstract, we present BC after LT in our institution.

Patients and Methods: Between February 1997 and February 2016, 548 LT in 542 patients (236 (43.1%) deceased donor LT(DDLT) and 312(%56.9) living donor LT(LDLT)) were performed in our institution. Mean age was 48.1 378(69.7%) patients were male and 164(30.3%) were female. The most common etiology of end-stage liver disease was Hepatitis B and D. Bilio-biliary, bilio-enteric and combined bilio-biliary/bilio-enteric anastomoses were performed in 364(66.4%), 181(33.6%) and 3(0.5%) patients.

Results: Thirty seven (6.7%) patients had BC. LDLT was performed in 24(64.8%) patients and DDLT was performed in 13(36.2%) patients. Anastomoses were bilio-biliary in 31(83.7%) patients, bilio-enteric in 5(13.5%) and combined in 1(2.8%) patients. Indications for LT were chronic Hepatitis B, Hepatitis C and Hepatitis B with Hepatitis D infection, chronic ethilism, fulminant liver failure and primary sclerosing cholangitis. Biliary complications were anastomotic stricture in 14(37.8%) patients, bile leakage in 9(23.6%) patients, non-anastomotic stricture in 6 (16.2%) patients, minimal dilatation in biliary tract in 6(16.6%) patients and bile stone in 2(5.4%) patients. Immunosuppression was achieved

with calcineurin inhibitors based medication in all patients. Fourteen (36.1%) patients had cholangitis at the time of diagnosis. In treatment, PTC and ERCP were used. Mortality was seen in 7(18.9%) patients (6 biliary sepsis, 1 chronic rejection).

Conclusions: Biliary complications can be minimized with appropriate surgical technique and close postoperative follow-up. Most of the patients can be treated with interventional methods.

L19

LIVE RELATED KIDNEY TRANSPLANT EXPERIENCE IN ABUJA NIGERIA: FIRST EIGHT CASES EVER

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Background: Renal transplantation is the treatment of choice for individuals with end stage renal disease (ESRD).

Methods: This is a retrospective review of eight live related renal transplantations recently performed at Garki Hospital, a public private partnership (PPP) facility in Abuja, Nigeria over 5 days.

Results: There were 6 males and 2 females in both recipient and donor groups and all were adults. The mean age of the kidney recipients was 43.2 (age range 19 -61) and 27.9 years (age range 23 – 50) for the donor group. The average hospital stay was 17 days (range 14 – 26 days) for the recipients and five days for the donors. All donor nephrectomies were done using the finger assisted technique. Complications in the recipients were reported as hematoma collection in two patients, a kidney stone causing obstruction in another patient. Pulmonary oedema was encountered in the intensive care unit in the immediate post operative period in two patients.

Conclusions: Successful renal transplantation often improves the well-being of patients with ESRD. In a developing country with a gapping dearth of facilities for adequate dialysis, transplantation appears to offer the most standard living conditions for those afflicted with this disease. Graft survival was very good in all eight patients and comparable to reports in the developed countries thus showing no need to travel to other countries as the results are exactly the same.

L20

STRATEGIES THAT STIMULATED DECEASED AND LIVING ORGAN DONATION FROM CONCEPTION OF ETHICAL PRINCIPLES TO LEGISLATION: A REPORT FROM QATAR

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Qatar is a multicultural, multinational Gulf country of 2 million people, mostly expatriate workers from South East Asia and the Middle East. Most expatriate workers have poor knowledge of organ donation, and approximately 70% live alone in Doha without their families. There are thus major obstacles for transplantation of expatriates from live related organ donors and in the approach to families when an expatriate becomes a potential deceased donor. Historically, lack of organ donors in Qatar compelled many wealthy patients, particularly local citizens to seek organs in foreign markets, returning to Qatar with high rates of morbidity and mortality.

In response to these challenges, Qatar's Hamad Medical Corporation collaborated in 2009 with The Transplantation Society and the Declaration of Istanbul Custodian Group in development of the Doha Donation Accord (DDA). The DDA is an ethical framework that implemented the recommendations of the Declaration of Istanbul designed to increase organ donation and prevent transplant commercialism. Implementation of the DDA has increased domestic transplant activity from

living related and deceased donors, and reduced travel from Qatar for commercial transplantation. The DDA together with its strategies is now known as the "Doha Model of Organ Donation".

The Doha Model Strategies include development of new programs in organ donation and transplantation like deceased donation and liver transplantation, launch of Comprehensive Communication plan for Public Education, Creation of Donor Registry, equitable access to transplant services, equitable allocation of donated Deceased organs and free transplantation and donation services without regard to citizenship, religion, ethnicity or financial status, Creation of the committee for Oversight of Living Donation (Ethical committee) for psychosocial evaluation of the prospective living donors, Removal of barriers to living related donation for legally resident migrant workers living alone without his family through provision of travel and visa support for the matching medically fit prospective living related donors, prohibition of funding of suspicious organ transplantation, honoring of organ donors and donor families with the medal of altruism and provision of the living donors with free follow up care for life, insurance against complications arising from donation, given organ allocation priority status in the event of later requiring organ transplantation and receive compensation for documented loss of wages due to absence from work during donation procedure.

In 2015 the Doha model core strategies were embraced, endorsed and regulated by the new Qatar National Transplant Law (No. 15) in addition to reconfirming sections imported from the old law 21 that regulate altruistic living donation, deceased donation and combat commercialism.

The journey of the Doha Model of organ donation from conception of the ethical principles followed by success of adopted strategies in increasing deceased & living organ donation and finally inclusion in the legislation is a good example for all countries willing to develop efficient ethical organ donation programs aligned with the best international ethical standards.

L21

SURVIVAL BENEFIT FROM KIDNEY TRANSPLANTATION FROM DECEASED DONORS AGED OVER 75 YEARS: THE EXPERIENCE OF CATALONIA WITH OVER 400 CASES

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Large registries have shown that end-stage renal disease patients have longer survival after kidney transplantation (KT) than remaining on dialysis (HD). However, KT from deceased donors aged 65y or older is associated with reduced graft function, and graft and patient survival compared to KT from younger donors, hence KT from deceased donors older than 75y is expected to accentuate these impaired outcomes. Due to these evidences, the use of deceased donors over 65y and particularly of those with extreme ages has been very restricted. However, we showed that the recipients of kidneys older than 65y have a proportional risk of death more than two fold (2.6 times) lower than their waitlisted counterparts remaining on HD. But no conclusive studies have been reported on the use of kidneys from donors ≥75y. In an attempt to elucidate this issue we first assessed the outcomes of the 415 recipients of kidneys from deceased donors older than 75y, that represent 7.1% of the 5,974 deceased-donor recipients of non-preemptive first transplants performed in Catalonia between 1990 and 2013. Survival of these 415 recipients at 1, 5, 10, and 15 years was 90.2%, 71.6%, 47.3%, and 26.9%, respectively, lower than that of the 5,559 recipients of younger donors (95.7%, 87.4%, 72.7% and 58.9%, respectively, $p<0.001$). Graft survival was also lower (79.0%, 59.7%, 37.6%, and 20.0% vs. 89.7%, 75.5%, 55.5%. And 39.0% respectively, $p<0.001$). We then compared the survival of these recipients with their pairs that remained on HD. We aimed to pair each eligible case with one control with similar characteristics at the time of entering dialysis program: age, sex, primary renal disease, cardiovascular co-morbidities, history of malignancies and chronic liver disease. We found

371 pairs. Patient survival was significantly higher in the KT group compared to the HD group: 90.7%, 83.6%, 72.5% and 49.3% vs. 87.9%, 65.6%, 48.5%, and 16.1% at 1, 3, 5, and 10 years respectively, and the adjusted proportional risk of death was more than two fold increased in the HD group (2.18 [95%CI 1.72-2.76, p<0.001]). Stratifying by age, hazard ratio for death in HD was 5.48 (95%CI 2.92-10.28) for those aged <65y, 1.93 (1.24–3.00) in those aged 65-69y, 1.61 (1.17–2.21) in those aged 70-74y and 1.39 (95%CI 0.40–1.16) in ≥75y olds. We conclude that, despite of the fact that KT from deceased donors older than 75y is associated with reduced survival, overall, their paired patients remaining on dialysis with a comparable chance of obtaining an organ, have a two-fold higher risk of death. Interestingly, the survival benefit is especially significant in the younger recipient subgroup aged below 65y for what our results may be considered for decision making in this area. We firmly recommend the reconsideration of the policies restricting the acceptance of deceased donors aged over 75y since with a good selection criteria of both donors and recipients many more patients that currently remain on dialysis could benefit from transplantation.

L22

THIRTY YEARS OF ORGAN TRANSPLANTATION IN TUNISIA

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Kidney transplants were first performed in Tunisia in 1986, and transplants soon extended to other organs including the heart, liver, and pancreas. Live related donors and deceased-donor kidney transplants were both began in July 1986. An organ procurement and transplant law was passed in March 1991, and the National Centre for Advancement of Organ Transplantation was created in 1995.The number of transplantation units has increased to 7 throughout the country, and the yearly transplant number has progressively increased from 40 at the first year to 139 in 2010, including 20% from deceased kidney donors. But it stagnated after the 2011 "spring revolution" while the need was increasing.

Heart transplants began in January 1993, and Tunisia and Jordan are currently the only Arab countries where it is practiced. However, only 16 patients have received a heart transplant as of 2004, and the number of recipients has decreased in the past 10 years.

Though liver transplants are rare in most Arab countries, they began in Tunisia in January 1998. Over 10 years, 38 patients benefited from this procedure. After a few years of stagnation, the number of liver transplants is increasing.

While all types of transplantation are needed, kidney transplantation is a priority in Tunisia .The target is to perform 400 transplants annually, which would require a long term strategy to provide a financial coverage using the National Health Insurance Funds in both the public and private sectors.

L23

POST TRANSPLANT MALIGNANCY

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Renal transplant recipients have superior over-all survival and a better quality of life in comparison with patients with end-stage renal disease who remain on chronic long-term dialysis. Nevertheless, various types of malignancies have been reported in a number of renal transplant recipients pursuant to their renal transplantations.

After transplantation, there is an increase in the incidence of a wide variety of malignancies compared to the general population, due to the chronic use of immunosuppressive agents. They appear to have a more aggressive behavior and a worse outcome. As a result, among recipients of renal transplantation, malignancy is the third most

common cause of patient death with graft function, after cardiovascular diseases and infections.

Death from cardiovascular disease and infection are both decreasing in frequency from a combination of screening, prophylaxis, aggressive risk factor management, and interventional therapies. Cancer, on the other hand, is poorly and expensively screened for; risk factors are mostly elusive and hard to impact on except for the use of immunosuppression itself; and finally therapeutic approaches to the transplant recipient with cancer are often lawlessness.

In renal transplant recipients skin cancers and post-transplantation lymphoproliferative disorder PTLD are among the prevalent malignancies. A number of risk factors contribute to the incidence of cancer including both conventional risk factors and those specific to transplant recipients. In transplant recipients commonly known factors such as oncogenic viruses, exposure to ultra violet light, total sun burden, previous exposure to carcinogens, cigarette smoking, advanced age, geographic location, and genetic predisposition, immune-suppression, increasing age, and a history of malignancy are risk factors to the transplant recipient population. The duration, intensity and type of immune-suppressive therapy all have an impact on the development of malignancy in the transplant recipient population.

In this paper I will review the issues as they come to affect transplantation: cancer before wait-listing, cancer transmission from the donor, cancer after transplantation, outcomes of transplant recipients after a diagnosis of cancer, and the role of screening and therapy in reducing the impact of cancer in transplant recipients.

L24

RETRANSPLANTATION

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Despite improvements in tissue matching, immunosuppression and short term outcome an import proposition of grafts still lost. Subsequently, the number of patients being relisted for second kidney transplant is increasing worldwide.

Many challenges are facing transplant physicians in retransplant situation including the prediction of outcome, controversy for graft nephrectomy, risks of ipsiLateral transplant, process for donor selection, impact of preemptive transplant , effect of immunologic factors, tailoring immunosuppression beside special situations as retransplant in BKV infection, cancer and pediatrics.

Retransplantation is considered to confer better survival to patients over dialysis and our ambition is to overcome enotransplantation barriers, to utilize stem cells and induce immune tolerance as ultimate goal.

L25

PECULIARITIES OF POST KIDNEY TRANSPLANT TUMORS

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Renal allograft recipients have an increased incidence of post transplant tumors particularly sequamouse cell carcinoma (SCC), basal cell carcinoma (BCC), lymph proliferative disease (LPD) & Kaposi's sarcoma .

Conversely, malignancies commonly encountered in the general population such as carcinomas of prostate, breast, lung, colon & uterine cervix doesn't show a higher frequency of occurrence in kidney recipients compared to that in general population.

Epidemiological studies showed 49-folds increase of NHL & 29-folds increase lip cancers & 400-fold increase Kaposi's sarcoma among kidney recipients when compared with age-matched controls in general population.

Post kidney transplant tumors becomes one of the leading cause of death in transplant population now a day & it may surpass the cardiovascular diseases as a cause of death in spite of functioning graft.

Tumors in kidney transplant population have certain clinical features which differ from that in general population& its pathogenesis also differ showing great relation to certain viral infections & the immune deficiency state of the patient. All these features & the most common tumors will be reviewed shortly.

L26

KIDNEY DONATION IN RENAL TRANSPLANTATION

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L27

CHANGING CLINICAL TRIAL DESIGN TO IMPROVE TRANSPLANT OUTCOMES

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Currently trials of immunosuppression in transplantation are in decline because the objectives of current clinical trials are focused on improving acute rejection rates and graft survival in the first 12 months. With 1 year graft survival rates of greater than 90% for standard care patients, the best that can be hoped for is non-inferiority compared to current standard of care. This is financially unviable for companies trying to bring forward new agents. Moreover, trials for difficult clinical-care issues or high-risk patients are not being undertaken. As a result, current trial design is not leading to improvements in long-term outcomes and safety, and hence important needs in transplantation are not being met. This is occurring at a time when there have been major advances in the use of new agents for common autoimmune diseases such as rheumatoid arthritis and inflammatory bowel disease. There are many reasons for why the pharmaceutical industry is reluctant to invest in new therapeutic agents for transplantation. These include regulatory barriers, a lack of consensus within the transplant community, as to what are the major unmet clinical needs and lack of a modern and relevant trial design that can identify superior outcomes in a reasonable time frame. These issues have finally coalesced to form a crisis within transplantation and it is clear to many that a radical change in approach is required if we are to bridge this impasse. In response to this issue The Transplantation Society has brought together a group of expert clinicians in transplant clinical trials with the objective of identifying what are the major unmet clinical needs and what would be the best approach to develop new trial designs that would be in compliance with new guidance that has been developed by regulatory authorities. In particular strategies that enrich for patients at increased risk of an adverse graft outcome are being proposed to better focus immunosuppression trials, and 12 month surrogate end-points that predict 5 to 10 year graft outcomes need to be validated. Equally important we, as a community, need to identify what are the major unmet clinical needs and devise clinical trials with the objective of identifying the best treatment protocols. This will require co-operation and the development of regional and international clinical trial consortia to progress these agendas

L28

THE WISCONSIN EXPERIENCE WITH NON-HEART-BEATING DONORS (DCD)

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Since 1980 more than 1500 organs from DCD were transplanted at our center. Organs include kidney, liver, pancreas and lung. This presentation will analyze the short and long-term outcomes after DCD and organ specific complications will be discussed. Also the question about outcomes in DCD who did not expire within the organ specific time limits will be presented. These data might be pivotal in the Ethics debate surrounding DCD in many countries around the world.

In our experience DCD organs are a valuable resource with the potential to improve and or save patients' lives. In the US, DCD donation is widely accepted and the ethical issues have been resolved.

L29

STANDARD AND EXTENDED APPLICATION OF CADAVERIC LIVER PROCUREMENT TECHNIQUES

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Despite increasing demand, there is a shortage of cadaveric donor livers. Approximately 15% of end-stage liver disease patients die while waiting for liver transplantation. Techniques that optimize the conventional liver procurement and utilize extended criteria and split liver grafts have the potential to increase the pool of donor livers.

We describe the conventional liver procurement in well-defined steps of warm and cold dissection. These steps can be adapted to procurement of the liver in non-heartbeating and donation after cardiac death donors. We describe the various techniques for split liver procurement, including the conventional split (segments 2, 3 and 1, 4-8) as well as the left-right split. The left-right split can divide the graft into segments 2-4 and 1, 5-8 with the inferior vena cava on the right lobe or into segments 1-4 and 5-8 with the inferior vena cava on the left lobe. Splitting can be performed *ex vivo* or *in situ*, each with advantages and disadvantages. *Ex vivo* splitting involves shorter donor operating room time and results in acceptable patient and graft survival. However, it involves inadvertent graft re-warming, biliary complications, bleeding from the liver's cut surface, and poorer outcomes in critically ill patients. *In situ* splitting allows identification of biliary and vascular structures, hemostasis during the parenchymal transection, and less warm and cold ischemia time. *In situ* splitting can facilitate graft sharing among transplant centers. Disadvantages include longer donor operating room time and the need for a stable donor and a skilled procurement team at the donor hospital. Finally, we describe the techniques for combined liver and small intestine and multivisceral organ procurements.

The central tenet of organ procurement is the expeditious assessment and recovery of donor organs without surgical injury. We describe simplified techniques that optimize and expand the conventional liver donor operation for application in extended criteria donors and for splitting liver grafts. These techniques offer immediate expansion of the donor pool.

L30

THE FACTORS THAT INFLUENCED THE DEVELOPMENT OF ORGAN DONATION AND TRANSPLANTATION PROGRAMS IN THE MIDDLE EASTERN COUNTRIES

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Middle East is a region centered on West Asia and Egypt. It is the cradle of many ancient civilizations and the origins of major religions including sixteen countries, Iran from the East, Egypt from the West, Turkey from the North, and Yemen and Oman from south. About 5.3% of the world populations are living in the Middle East. Strategically speaking economy, politics, culture, and religion remain very sensitive regional affairs that have influence on all aspects of life including transplantation. Despite the so many hindering factors that has affected the development of organ transplant programs in many countries in the Middle East, 10 out of 16 Middle Eastern countries are amongst the 50 most active countries globally. About 8.7% of kidney transplantation and 5.1% liver transplantation of the total global activities are done in the Middle East.

First reported kidney transplantation was done in Iran in 1967 and the first liver transplantation in Turkey in 1988. To date all the countries have different capacity of kidney transplant programs, nine countries have liver transplantation programs and few of the leading countries have multiorgan transplant programs.

There is great variation in the infrastructure outcome and practices of the organ transplant programs in the Middle Eastern countries as variable as their socio-cultural values, economic status, religious views, political regime, corruption indicators, public educational status, healthcare resources, government support, and country security status. All these factors have played a major role in shaping the infrastructure and practices of different organ donation and transplantation programs in the Middle Eastern countries.

The armed conflict and the political upheaval over the last five years in some of the ME countries have destroyed well established programs and delayed the development of new programs in others. When a country is afflicted heavily by poverty, corruption, and violence, then providing shelter, security, medical care and food for the beleaguered people become the only logical priority.

In the Middle East there are many successful models to be followed by countries that are lagging behind in transplantation. The Middle Eastern countries need to address the ethical shortcomings in their programs in order to build the trust of the society to pave the road for an efficient deceased donation program. Selfsufficiency can only be achieved through collaboration among themselves and international communities with full determination to serve their patients' health and life.

L31

ORGAN PROCUREMENT: THE IMPORTANCE OF FUNDING

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The financial advantages of resorting to renal transplantation, rather than chronic hemodialysis for the treatment of end stage renal disease, have been widely documented. We have reevaluated the costs involved when the new, more expensive, immunosuppressors are used in an area where human labor is relatively cheap. The economic advantages of successful kidney transplantation are still significant. Besides, kidney transplanted patients enjoy a better quality of life, are more productive and live longer. Transplantation, however, needs organs. These can only be provided through a successful national deceased organ donation program. Investing in such a program is, thus, a necessity that all well-intending decision makers should comprehend. Making sure that this fact is unanimously accepted should antedate any attempt at embarking in an organ donation endeavor.

L32

MINIMUM REQUIREMENTS FOR ORGAN TRANSPLANTATION LEGISLATION AND PROGRAM DEVELOPMENT

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L33

LONG TERM SAFETY OF LIVING KIDNEY DONATION IN AN EMERGING ECONOMY

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Founder, Sindh Institute of Urology and Transplantation
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L34

THE LEGACY OF MULTIVISCERAL TRANSPLANTATION

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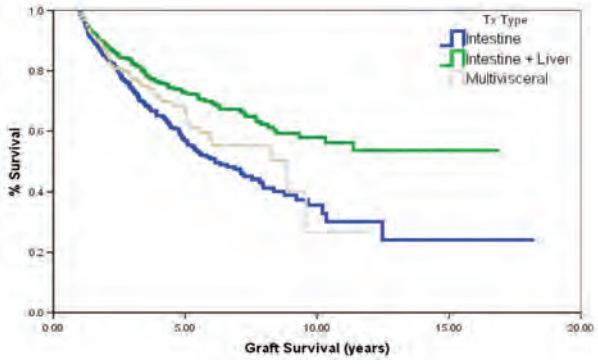
The evolution of clinical transplantation has spanned over 60 years and resulted in successful engraftment of kidney, pancreas, liver, heart, lung, and more recently the intestine. Each organ specific trial has been able to breach technical and clinical challenges and the immunologic barriers using treatment strategies that seemed to be applicable to all organs.

The initial successes of intestinal transplantation in the early 1990's resulted in an overwhelming flow of children with intestinal failure to centers performing these procedures, and though the early survival provided the encouragement for future milestones, the failure rate of patients waiting for transplant and the clinical presentation of patients who lost their grafts followed their pretransplant cohorts. Indeed, the survival of children with IF who presented with liver disease was no greater than 30% at one year. This prompted an important development in the management of these patients both before and after transplantation, which focused the care of the patient in the center of a multidisciplinary team of gastroenterology, surgery, nutrition, specialized nursing, interventional radiology, psychiatry, and intensive care.

Intestinal transplantation is lifesaving in children with IF who have significant complications of total parenteral nutrition. Data from the International Intestinal Transplant Registry thru 2010, the OPTN/SRTR Annual Report 2012, and center-specific data reports have documented significant improvements with short- and long-term survivals for transplantations occurring principally in the last 10 years. Over 2600 Intestinal transplants have been performed in almost 80 centers worldwide, though most cases have been done in 35 centers. Given the success of intestinal rehabilitation, however, the number of patients needing transplantation has declined since 2005, with the majority of patients coming from home at the time of their transplant (illness severity has decreased), and over half of patients requiring only the isolated intestine transplant (through prevention/resolution of TPN induced liver disease). With the immunosuppression minimization strategies currently in use there has been a significant improvement in long-term survival as well, similar to what has been observed with other organ transplants. The best survival is achieved when the patient is at home waiting, and a liver component is added to the intestine graft. Though the long term data are not robust, there is evidence that recipients are independent of TPN, there are good growth and development in children, and the quality of life after transplantation appears equal to or better than the quality of life on TPN. The most frequent associated morbidities have been dysmotility of the graft, hypertension, osteoporosis, diabetes mellitus, and renal failure [44]. The success of intestinal transplantation has fostered the development of multidisciplinary intestinal centers

which have focused on intestinal rehabilitation and improving the devastating effects of TPN on the liver. Intestine transplantation has thus become a less frequent necessity, and follows the guidelines stipulated in this report, and by others.



L35

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Saman Nikeghbalian

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L36

HOW TO IMPROVE THE QUALITY OF DONOR LIVERS AVAILABLE FOR TRANSPLANTATION?

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One of the major problems facing organ transplantation worldwide is the acute and widening disparity between the increasing numbers of potential recipients who vie for a constant donor supply. Indeed, although the number of transplants during the last decade has increased 2-3-fold, the number of patients on waiting lists has increased 15-fold, and many of them die while waiting for the life saving organ. The major contributing and detrimental factor is the decreasing quality of organs, primarily due to the aging of donor population, and associated pathological conditions. These "suboptimal" or "marginal" organs are particularly susceptible to harmful effects resulting from so-called "ischemia and reperfusion injury" (IRI) syndrome, i.e., local tissue damage that occurs during harvesting from cadaver sources. As many organs that suffer from IRI syndrome become discarded and never transplanted due to inferior quality, there is general consensus that IRI contributes to the acute donor organ shortage. Moreover, even if successfully transplanted, these "suboptimal" organs experience higher incidence of dysfunction and rejection episodes, as compared with "normal" cohorts. The improvement of donor organ quality is of paramount importance, as it should save lives, benefit patient outcomes, and enhance the overall success of transplantation.

The Dumont-UCLA Transplant Center in Los Angeles, California, has one of the largest and most successful liver transplant programs in the U.S. (>5,500 liver transplants since 1984), and its Laboratory has been at the forefront of cutting-edge transplantation immunobiology research for years. There is a proven record of successful translation of the most promising and pioneering discoveries from the bench to the bedside. Recent advancements in molecular T cell – macrophage signaling pathways provide exciting opportunities to combat IRI in liver transplantation. We have incorporated a bench-to-bedside approach to "rejuvenate" donor livers and improve their function by advancing novel concepts of: 1/ selectively targeting local innate immune activation, a signature of the hepatic IRI syndrome; and 2/ enhancing local intrinsic cytoprotective mechanisms that promote hepatocyte regeneration and contribute to homeostasis in IR-stressed liver tissue.

Moreover, advances in technology targeting *ex-vivo* preservation period may increase the donor pool by improving the outcomes of marginal livers. The hypothermic machine perfusion (HMP) has been proven as a superior alternative to a static cold storage preservation. The HMP technology provides a platform to therapeutically modulate and repair the graft, which otherwise is declined and discarded. Data supporting such a novel hepatic

rejuvenation approach have been produced in terms of clinical performance, with HMP-perfused livers being more resistant to IRI, while showing improved hepatocellular function, increased ATP levels and depressed inflammation responses.

L37

BARRIERS TO EFFECTIVE RENAL TRANSPLANTATION PRACTICE IN THE MIDDLE EAST

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Renal Transplantation is the best option for treating patients with end stage renal disease. The practice of renal transplantation in the Middle East (ME) differs significantly between courtiers given the differences in the cultural, religious, and economic backgrounds. Therefore, barriers and solutions for organ transplantation in a given country may not fully or at all apply in another

The ME is a special area where there are certain challenging factors that may turn into barriers to effective renal transplantation especially the low health spending, poorly developed infrastructures, inadequate dialysis programs, organ shortage and commercial transplantation. ME is endemic in certain transplantation related infections like viral hepatitis and tuberculosis which detrimentally affect patient and graft survival.

Living kidney donation is the most widely practiced type of donation in the ME. However, some countries like Iran, Turkey, Saudi Arabia, Kuwait, and Tunisia established their deceased donation programs. There are certain countries like Egypt and Syria where the existing Islamic Fatwa and the governmental legislations on deceased donation weren't translated into effective programs on the ground; the prevailing organ commercialism, the lack of interest among transplant communities, and the lack of acceptance by the lay public are probably the main causes.

The low health budget in the emerging economies of most Middle Eastern countries is becoming harder with the recent instability in many places across the ME with its negative impacts not only on the volume of organ transplants but also on the ethical aspects by increasing organ black market.

The opportunity lies in investing the existing models of organ donation in the ME especially those who are essentially relying on deceased donors, incorporation of Islamic fatwa, governmental legislations, media and technology to increase awareness at large toward transplantation

L38

A PILOT STUDY OF DONOR: A SMARTPHONE APP FOR INCREASING LIVE ORGAN DONATION

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Live donor transplantation is a viable treatment option for the over 100,000 individuals awaiting deceased donor transplantation in the United States. However, waitlist candidates report substantial barriers to identifying a live donor. The objective of this study was to test the feasibility of Donor, a social media smartphone app, which was developed to help transplant candidates identify a live donor. We studied 54 kidney and liver waitlist candidates at our high volume transplant center. We compared the likelihood of identifying a live donor among study participants and matched controls, matched on organ needed, age at listing, peak PRA (if waitlisted for kidney), highest MELD (if waitlisted for liver), sex, race, ABO, and year of listing. We used Kaplan-Meier curves and Cox

proportional hazard models to estimate the association between using Donor and identifying a live donor. Of the study participants, 57.2% reported Donor to be very easy to use. Compared with matched controls, study participants had significantly higher live donor inquiries (18.5% versus 4.2% live donor inquiries within 13 months of the app download date; HR: 4.55, p=0.01). Donor is feasible for waitlist candidates to use and an effective tool to help transplant candidates identify live donors using social media.

L39

BUILDING UP A DECEASED DONOR ORGAN TRANSPLANT PROGRAM: CHALLENGES & SOLUTIONS

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In Jordan, the law for cornea donation was issued in the year 1956. Human organ transplantation started in the year 1972. Legislation for organ donation and transplantation from both living and deceased donor was established in the year 1977. Country has good infrastructures and well trained human recourses where first in the region heart transplant performed in 1985, there is also a fair governmental financial support to the transplantation services.

Nevertheless transplantation activity depending mainly on the living donation (99%) and the available organs cover only about (5%) of the needs, so activation and build up a deceased donor transplantation program became a national task. In year 2010 the government established a new institution which had been activated in 2012 to take over all the transplantation activity in the country.

The initial few people and the leader (champions) who agreed to start working on transplantation program experienced much excitement, airiness, frustration, absolute depression and continuous rejection. Resistance came from many quarters and was prevalent in large organizations and it was obvious among individual physicians. The champions did not give up and demonstrated leadership role which was supported by high rank officials and they continue creating favorable social, legal, cultural environments for the success of a transplant program, building national, regional and international relationships to help in acquiring and training all the personal who are responsible for providing crucial support to the program, involving and using the mass media continuously.

Finally the outline of the program was drawn and the instructions, general rules and guidelines were issued and put together in a Directory (Manual) for official use in April 2015. After that there was a report of eight cases of potential brain death donors, with conformation of the diagnosis in six of them, and in one case there was an organs retrieval and allocation according to the adopted rules of priority in the national waiting list and this was the first case in the country where a donated organ transferred from donating hospital to another one. In addition the number of transplant operations increased by 26% in 2015 of that in 2014.

A major challenge was also the acceptance of the new regulations by major institutions and the pressure they put to impose themselves as a leading forces with the attempt of alienation the others. But with education, practice and leadership the barriers could be overcome.

01

TRANSPLANTATION ETHICS

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Organ, tissue and cell transplantation involves many aspects in addition to medical and surgical approaches. Ethics is one of those issues. Organ trafficking, transplant tourism and commercialization of human organs are major ethical problems.

The Transplantation Society and the International Society of Nephrology agreed on a text during a summit meeting in Istanbul in May 2008. The Istanbul Declaration banned all illegal activities related to organ transplantation. WHO Guiding principles on human cell, tissue and organ transplantation have led 11 guiding principles parallel to the Istanbul Declaration. The big gap between demand and supply has unfortunately resulted in black markets. This need driven problem has caused some to believe that prohibition alone is not effective in combating organ commercialization and trafficking. Consequently a regulated system of kidney selling has been proposed. Proponents of this idea claim that organ sale can reduce black market abuse.

It is estimated that since 1980, over 2000 kidneys have been sold in a certain geographical area. India and Pakistan have passed laws to stop organ tourism and organ sales. In Germany, buying an organ is regarded as a crime and the recipient is prosecuted. An Iranian study found that 81% of transplant patients selected a vendor kidney despite having a potential living related donor.

The main unethical aspects of organ selling include poor postoperative care of the donor, motivation of socioeconomically low level people to donate their organs and the easy access of wealthy individuals to organs. The donors experience physical, social and financial hardship postoperatively. Another problem is that the system of paid donation may compromise altruistic donation.

We have to find ways to distinguish between illicit and altruistic donation and build a voluntary and unpaid system. Since prohibition works reciprocally, the transplantation community and legislative bodies should look for alternative solutions to the sale of organs. There are other ethical topics that need attention:

a) Uterus transplantation - The world's first child born after uterus transplantation offers a new mode of therapy for female infertility. Although uterine transplantation is in its early stage, it carries serious ethical problems.

b) Organ procurement from prisoners sentenced to capital punishment - China is the only country in the world using this source. The great discrepancy between the number of deceased organ donations, excluding the executed prisoners, and the number of transplanted organs is an obvious substance to this fact. There has been an international opposition against this practice and pressure to halt it. It is still not clear if China is ready to stop this unethical and unacceptable system.

c) Stem cell transplantation - The problem of tourism is also valid for stem cells. There is the risk of being subject to unproven stem cell interventions. The need for donors and the necessity of clinical testing and use are the main issues.

d) Neonatal and pediatric organ donation.

e) Transplanting organs from transgenic animals to human beings- It is ethically problematic both from the human and animal sides.

02

WAITING TIME OF CHILDREN IN LIST FOR RENAL TRANSPLANTATION: ONE CENTER EXPERIENCE

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Background: Renal transplantation is accepted the best treatment choice of end stage renal failure in children. Successful renal transplantation normalizes metabolic and endocrine abnormalities and it allows a most near-normal life. The goal is to apply transplant within 6 months for children 0-5 years old, within 12 months for children 6-10 years old and within 18 months for children 11-17 years old. General In this study we evaluated time of waiting of our patients for renal transplant.

Materials and Methods: We retrospectively evaluated the data files from 96 pediatric renal transplant patients over the last past 5 years. Demographics of the patients, cause of chronic renal failure, time of waiting for transplant, donor type were recorded.

Results: The mean age of patients was 9.66±5.75 years. The mean time of waiting was 28.86±24.28 months. 70 patients received a living-related donor allograft and the remaining 26 patients received the allograft from a deceased donor. The mean time of waiting is significantly long for patients who received the allograft from a deceased donor when compared with patient who received a living-related donor allograft (38.16±22.97 vs. 25.23±23.98, p=0.02). 12 patients were included to the waiting list before 5 years old, 35 patients were included between 6 to 10 years old and 49 patients were included after 10 years old. The mean time of waiting was 17.70±11.12 months for patients between 0-5 years old. The mean waiting time was 2 times longer for patients between 5-10 years old (37.35±29.37 months). The mean time of waiting was 25.70±21.11 months older than 10 years old. 9 patients received a living-related donor allograft and the remaining 3 patients received the allograft from a deceased donor for patients who were included to the waiting list before 5 years old. 27 patients received a living-related donor allograft and the remaining 9 patients received the allograft from a deceased donor for patients who were included to the waiting list between 5 to 10 years old. 35 patients received a living-related donor allograft and the remaining 14 patients received the allograft from a deceased donor for patients who were included to the waiting list after 10 years old. Although it is not statistically significant, waiting time is longer for patients who received the allograft from a deceased donor when compared with patients who received a living-related donor allograft for each age group (26.33±12.74 months vs. 14.00±8.85 months, for 0-5 years old; 50.37±33.01 months vs. 32.82±27.32 months for 5-10 years old; 33.71±14.73 months vs. 22.41±22.60 months for >10 years old).

Conclusions: Short waiting time provide minimum complication related dialysis and end stage renal failure. Although living-related organ donation provides patients with an opportunity to apply an early renal transplant, we are so far of the goal of the waiting time for children. Further efforts are needed for reduce the waiting time for renal transplant.

03

TRANSPLANTATION PROGRAM IN KAZAKHSTAN: THE WAYS TO COORDINATE THE DEVELOPMENT OF ORGAN DONATION

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In recent years organ transplantation has become a well-established procedure for management of renal, liver, cardiac, and respiratory failure. In spite of that, a shortage of organs still remains a serious problem to the full development of these therapeutic approaches in Kazakhstan.

The first kidney transplantation was performed in

Kazakhstan in 1979, approximately 40 years ago. The operation itself was technically successful, but the lack of immunosuppression caused graft rejection, and the patient died after few days.

Due to government policy an organized organ transplant program started more than 4 years ago and the program was supported by Ministry of Health. During this period a well-designed program of transplant organization has been established. In Kazakhstan each potential donor hospital has a transplant coordinator who is responsible for the whole process of organ procurement. Eleven transplant centers work currently in Kazakhstan, and more than 700transplantations has been performed up to the end of year 2015.We found that renal, liver and cardiac transplants increased since transplantation program started.

We conclude that this program was successful in Kazakhstan and organ donation, procurement, and transplantation would become commonplace events to solve the problem of the organ donor shortage.

04

EARLY UROLOGICAL COMPLICATIONS DETERMINE LONG TERM KIDNEY GRAFT SURVIVAL

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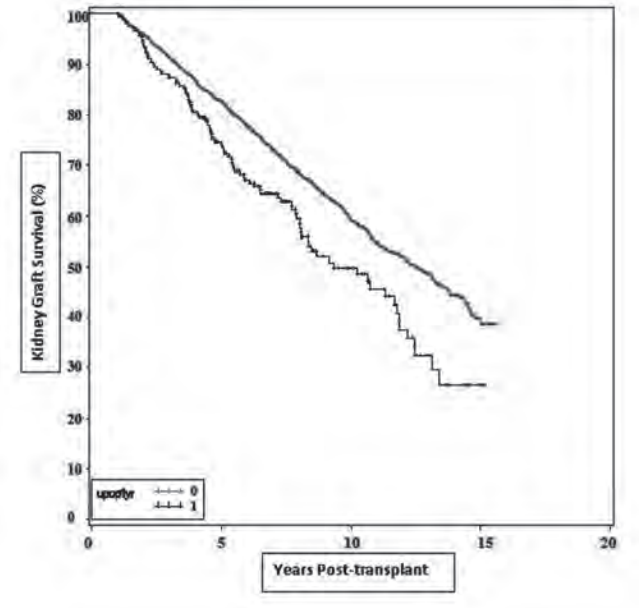
Background: We evaluated the long-term impact of early urologic complications on long-term kidney graft survival.

Materials and Methods: This study includes 2274 patients who had a primary kidney transplant between January 2000 and June 2012. Urological complications which occurred during the first year after transplantation were analyzed. Long-term graft survivals, patient survivals and rejection rates were compared between recipients with and without urological complications. Ureteral strictures, urinary leaks, symptomatic vesicoureteral refluxes, lymphoceles causing urinary system dilatation, urinary system dilatation without any obstructive etiology, reported kidney or ureteral injuries during surgery or procurement comprised the main categories of the urological complications.

Results: 211 patients (9.3%) presented with urological complications in the first year after transplantion. Delayed graft function, male gender and donor age were factors increasing the risk for urological complications in the early period after kidney transplantation ($p<0.05$). Although there was no statistical difference in term of rejection rates, graft survival was significantly lower in the group of recipients with urological complications (figure-1). We determined that urological complications occurring in the first year after transplantation have significant detrimental impact on long-term graft survival.

Conclusions: Our study emphasizes the importance of urological complications seen in the early postoperative period. Careful donor and recipient surgery is paramount to avoid these complications in an attempt to optimize long-term outcomes.

Figure 1. Post transplant graft survival of patients with and without urological complications



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05

THE IMPORTANCE OF RENAL BIOPSY IN CANDIDATE LIVING DONORS WITH PROTEINURIA

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Background: Due to organ shortage and difficulties for availability of cadaveric donors, living donor transplantation is an important choice for having allograft. Whereas donors with hematuria and proteinuria consist of complex living donors and these donors requires careful evaluation for future renal risk. The aim of this study is two-fold; first to investigate the importance of proteinuria in the determination of renal pathology in donors, and second to find out the importance of renal biopsy in the selection of donor for transplantation.

Materials and Methods: Only 679 donors who underwent donor evaluation process between 2000 and 2013 were included in the study. Among 679 donors only 70 showed proteinuria. Serial 24-hour urine protein and microalbumin were examined in all these donors and all of them underwent renal biopsy. Renal biopsies were examined under light, immunofluorescence and electron microscopy.

Results: The mean 24-hour urine protein and microalbumin were found 438±302 mg/day and 103.6±235 mg/day respectively in 70 cases. Among 70 cases with proteinuria, only 21 (30%) had chance to become a donor after biopsy (Group 1). Biopsy findings of these 21 cases were found to be nonspecific. Remaining 49 cases were taken out of donor list because of their biopsy and/or clinical findings (Group 2). In group 2, the biopsy diagnosis was FSGS in 17, IgA nephropathy in 8, MPGN in 4, IgM nephropathy in 3, and tubulointerstitial nephritis in 2, hypertensive nephropathy in 2, membranous glomerulonephritis in 1, minimal change disease in 1, lupus nephritis in 1 and nonspecific biopsy findings in 10 cases. A significant difference was found between group 1 (284.8±114 mg/day) and group 2 (503±333 mg/day) in regards of 24-hour urine protein ($p<0.01$). In addition significant differences was noted between group 1 (34.2±59.2 mg/day) and group 2 (143±275.4 mg/dl) in regards of 24-hour urine microalbumin ($p<0.01$). Statistically no significant difference was found between two groups in regards of creatinine clearance. Only 16 patients also showed microscopic hematuria in addition to proteinuria. All 16 cases were included to group 2.

Conclusions: In conclusion proteinuria should be assessed as a standard part of the donor evaluation process. We suggested that proteinuria greater than 300 mg is a marker of glomerular pathology and renal disease. We also concluded that microalbuminuria determination may be a more reliable marker of renal disease and the presence of microalbuminuria should preclude donation.

06

CONDITION OF HEMOSTATIC TEM IN PATIENTS WITH RENAL DISEASE ON HEMODIALYSIS PROGRAM

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Background: Acomprehensive study of patients with chronic renal insufficiency receiving program hemodialysis treatment in the dialysis departments of the Scientific surgery centre named after academician M.Topchubashev and the Republican clinical urological hospital named after academician M.C.Cavad-zade, Baku.

Materials and Methods: The study was conducted during 2009-2014. In total, 159 patients have been studied and they have been divided into 3 groups according to the duration of hemodialysis treatment. For determining the impact of clinical and laboratory parameters on the indicators characterizing the

vascular wall remodeling of remote and proximal common carotid artery and the condition of diastomic and systolic phase of the left ventricle of the heart, the pulse rate of the veins in patients with cardiovascular complication, depending on the duration of dialysis therapy, the multivariate regression analysis has been used.

Results: It was identified that the increase of the duration of hemodialysis is characterized by the atherogenic dyslipidemia profile, the accumulation of lipid peroxidation products and the decrease of the activity of antioxidant enzymes (superoxide dismutase and catalysis) are accompanied by increasing signs of endothelial dysfunction manifested by the decrease in the concentration of stable metabolites of nitric oxide serum and the increase of the activity of Willebrand factor; by the activation of intravascular processes; a mean and moderate hyperhomocysteinemia is observed.

Conclusions: Thus, this study allowed to identify a group of patients at high risk on the basic of the results obtained.

O7

RESULTS OF BK VIRUS SCREENING IN RENAL TRANSPLANT RECIPIENTS

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Background: BK virus nephropathy (BKVN) has appeared as an important cause of renal graft loss with the use of potent immunosuppression. The aim of this study is to identify BKVN with regular BK virus (BKV) screening for early treatment.

Materials and Methods: This prospective study includes kidney transplant recipients from December 2012 to December 2014 who underwent kidney transplantation at the Baskent University Istanbul Hospital. Blood samples were collected for BKV DNA PCR from the patients at the postoperative 1, 2, 3, 6, 9 and 12. months. Incidence of BKV, rejection episodes, renal biopsy results, treatment of BKV and results of the treatments, mortality and graft loss rates were evaluated.

Results: A total number of 57 patients (26 women, 31 men) with a mean age of 41.5 (range: 18-63 years) underwent kidney transplantation. 54 (94.8%) of them transplanted from live donors and 3 (5.2%) of them from cadaveric donors. Antithymocyte globulin (ATG) induction therapy was administered at the time of transplantation as well as 3rd days thereafter and tacrolimus (target level 8-10 ng/mL), mycophenolate mofetil (1g twice a day) and prednisolone were started as immunosuppressive therapy and tacrolimus maintained with a target level of 6-8 ng/mL three months after the operation. A total number of 12 (21%) BKV positivity was detected at the postoperative one year period. They were seen as one at the 1st month, one at the 2nd month, 5 at the 3rd month and 4 at the 6th month. Immunosuppressive drug doses reduced in all patients. Ten of them (83.3%) became BKV negative in three months but in 2 patients (16.6%) biopsy proven BKVN was developed. The first patient became BKV positive at the 3rd month and BKVN detected at the 6th month, two months after type 2A acute cellular rejection (ACR) and one month later acute antibody mediated rejection (ABMR) was developed, after the treatment of rejections patient died due to sepsis at the 9th month. The second patient developed type 3 ACR and ABMR at the postoperative 2 weeks and pulse steroids, ATG, Plasmapheresis and intravenous immunoglobulin (IVIG) treatment was given. BKV positivity and BKVN with type 2A ACR was detected at the postoperative 6th month. Cidofovir started after treatment of rejection but graft loss occurred at the postoperative first year due to BKVN. BKVN negative 3 of 10 (30%) patients with BKV positivity developed rejection episodes. Totally, BKV positive 5 of 12 patients (41.6%) developed rejection episodes whereas 8 of 45 (17.7%) BKV negative patients developed rejection episodes. BKV positive one of 12 patients (8.3%) died due to sepsis whereas 3 of 45 (6.6%) BKV negative patients died due to Guillain-Barre Syndrome, fungal brain abscesses and disseminated intravascular coagulation.

Conclusions: BKVN is an important cause of renal graft loss. We found BKV positivity as 21% and BKVN rate as 3.5% in our study. Also we recognized that BKV positive patients developed more rejection episodes. Routine BKV screening after renal transplantation is very important for the diagnosis and treatment of BKVN.

08

DNA METHYLATION STUDIES AND GRAFT INJURY SEVERITY IN LIVER TRANSPLANTATION

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Background: Graft epigenetics may determine or influence injury severity and function post liver transplantation (LT). This study aimed to interrogate DNA methylation profiles and graft injury after liver transplantation.

Materials and Methods: The study included 22 deceased donor LT patients with severe (SI, n=11; AST>500 IU/L) and mild (MI, n=11; AST<500 IU/L) early graft injury at 1-day post-LT. Tissue biopsies were collected at pre-implantation (L1) and at post-reperfusion (L2). Genomic DNA was extracted from pre implantation biopsies; bisulfite converted and used in Infinium 450k methylation arrays. Raw data was normalized by SWAN method and analyzed with R bioconductor. Beta scores were converted to M-values. F-test was fit for significant demethylated CpG sites ($q<0.05$). Total RNA was isolated from all biopsies, labeled and used in gene expression microarrays. Probeset summaries were obtained using RMA algorithm. Unpaired ANOVA was fit for deregulated probesets ($p<0.001$, FDR <5%). Molecular pathways were evaluated by IPA tool. CpGs (Methylight) and genes (RT-PCR) were validated.

Results: Groups were similar in clinical and demographic characteristics. In total, 3663 CpG sites (2574 hypomethylated; 1089 hypermethylated) were significantly demethylated and mapping within genic regions. Interestingly, 2251 CpGs (92% hypomethylated, $p<0.0001$) mapped within GC-islands located at promoter regions (1971 genes) in SI grafts. Molecular pathway analysis based on CpGs methylation identified apoptosis activation signaling (TP53, BIM, BAD, BAX, DIABLO, APAF1, CAD, FADD, CASP2, CASP3), ubiquitin protein degradation, and cell cycle regulation (Rb, p27KIP, p18INK4C, CDK, CHK1) ($p<0.0001$). Genes with multiple hypomethylated CpGs anticipated increases in liver cell death (BCL2L11, HSPD1, APP, INHA, TRIM27, BAD) and G1/S cell cycle check-point (SKP2, CDC25A, SIN3A, PA2G4). No genes were differentially expressed at pre-implantation. A unique significantly deregulated molecular signature (94 genes) correlating with CpG demethylation coincided with liver damage (KRT18), apoptosis and cell cycle regulation (PAWR, KRAS, DUSP4, PTPR3) at post-reperfusion in SI grafts. Genes were validated by RT-qPCR.

Conclusions: Demethylation of specific genes (cell death) may induce graft injury severity post-LT. Pathway-specific blockage and preemptive interventions may reduce injury severity.

09

LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA

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Background: Hepatocellular carcinoma (HCC) is the sixth most common cancer worldwide and the third highest cause of death related to malignancy. Since HCC diagnosis is typically late, the median survival following diagnosis is approximately 6-20

months. The 5-year survival rate is reported as less than 12%. HCC typically arises in the background of cirrhosis. Liver transplantation is regarded as an optimal radical therapy for selected patients with HCC. Initial experiences with orthotopic liver transplantation were limited to patients with extensive unresectable tumors, and were marked by uniformly dismal outcomes due to high rates of tumor recurrence. Milan criteria are the gold standard for recipient selection. Since Milan criteria are restrictive for increasing candidates, they are expanded into alternative sets of criteria. We aimed to evaluate our LT indications and results for HCC.

Materials and Methods: Between 8 December 1988 and 31 December 2015 we performed 512 liver transplants at our centers. We developed our criteria for LT in HCC candidates at Baskent University and currently perform LT in all HCC patients without major vascular invasion and distant metastasis. We retrospectively reviewed our LT results of patients with HCC.

Results: 59 patients (59/512; 11.5%) had liver transplantation for HCC. 51 were male (86%) and 8 were female (14%). 11 of these patients were children and 48 were adults. We performed 39 living donor LT (10 pediatric, 29 adult), 20 deceased donor LT (1 pediatric, 19 adult). We had 16 patients (27%; 1 pediatric and 15 adults) who were beyond Milan criteria radiologically and pathologically. We performed 11 living donor LT and 5 deceased donor LT in these patients. All deceased donor LT had down staging therapy before LT. We had 15 patients (25.4%; 4 pediatric and 11 adults) who were within Milan criteria radiologically; but after LT, when pathologic specimens were evaluated, they were found to be beyond Milan. We performed 10 living donor LT and 5 deceased donor LT in these patients. We diagnosed HCC incidentally with pathological examination in 6 patients (10.1%) (4 pediatric, 2 adult). All of the 6 incidental HCC cases were still alive without HCC recurrence for 63-128 months. HCC recurrence was detected in 14 cases (23.7%). Disease free 5-year survival rates of LT patients beyond Milan criteria and within Milan criteria were 56.8% and 78.7%, respectively (p= .024).

Conclusions: LT within Milan criteria had better survival rates. However, Milan criteria can be safely and effectively expanded with promising results even in patients beyond Milan criteria

O10

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 transplantological 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
Coordinators - 0
Specialists, leading patients in post-transplant period -3

Three-immunosuppression protocol:
1992 -1998: azathioprine, Bioran (cyclosporine) and prednisolone.
1998-2006: Sandimun Neoral (cyclosporine), Cell-sept (MMF), prednisolone
2010 – Present: Quadruple immunosuppression:

1. Monoclonal antibody (Simulect)
2. Takrolimu with (Prograf)
3. MM F (Cell-sept)
4. Corticosteroids (prednisone)

Scientific-methodical work
Since 2010, in RSCS named after academician Vahidova, actively conducted experimental jobs on liver transplantation

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

Outpatients: 100% state security

O11

THE ROLE OF ADJUVANT THERAPY IN PREPARING PATIENTS FOR SURGERY CLOSELY RELATED KIDNEY TRANSPLANTATION IN THE REPUBLIC OF UZBEKISTAN

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Background: 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.

O12

THE EARLY RESULTS OF 333 DONOR OPERATIONS IN CENTRAL OIL WORKER’S HOSPITAL, AZERBAIJAN

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Background: In this presentation we want to show the results of donor operations in 333 organ transplantation performed in our centre and first time in Azerbaijan. There were performed 82 liver and 251 kidney transplantations in our centre.

Materials and Methods: 333 living organ donors at the Hospital of Oil Worker’s from 2008 till 2014 are selected for study.

Results: Our Transplantation team carried out 333 living donor organ transplantation operations at the Central Hospital of Oil Worker’s from 2008-2014. From these 184 organ Transplantation operations 82 were liver and 251 were kidney transplantation. There is also one case of simultaneous liver and kidney transplantation where grafts were taken from two separate donors. This operation was first time among former USSR countries. Postoperative complications consist 6.1% for liver donors when in one liver donor had developed bilioma. Percutaneus drainage of this bilioma was performed successfully and bilioma turned into biliar fistula which closed after one month without any residual signs. In one case profuse intraoperative bleeding from IVC happened. Bleeding was stopped and patient had massive transfusion. Next case with complication was bleeding on the second day postoperativly, which required relaporatomy. Other complications with delayed hyperbilirubinaemia and brachial palsy were registered and treated nonoperatively. 121 donor nephroectomies was performed with laparoscopic approach (115 hand assisted laparoscopic approach, 6 patiens pure laparoscopic nephrectomy) Donor nephrectomies are resulted without major complications. There were no major donor complications in donors those operations performed

laparoscopically. One patient presented a wound hematoma responding to conservative treatment. And one case of limforrhea were

Conclusions: In living donor organ transplantation the priority is to be careful with selection of donors in order to decrease morbidity. The main criteria if you want to be successful in donor operations are detailed investigation of donors before operations and strict protocols for their selection. The low complication rates in this study are the signs of our strict attachments to donor selection protocols. Living donor organ transplantation is an alternative to cadaveric organ transplantation in the countries where deceased organ transplantation program is absent. This kind of advanced operations must be performed in dedicated and specialized hospitals. The outcomes are usually satisfied when these operations are performed in these centres.

O13

MULTISLICE COMPUTED TOMOGRAPHY OF POTENTIAL LIVER DONORS: A SINGLE CENTER EXPERIENCE

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Background: Multislice computed tomography (MSCT) prior to liver transplantation is an important aspect of the diagnosis of changes in the liver as fat infiltration, as well as visualization of the individual vascular anatomy and calculation of liver volume. The aim of our study was to analyze the results of the single center experience to conduct liver MSCT of donors who are preparing for the transplant donation.

Materials and Methods: We studied the MSCT evaluation results of 39 (25 male and 14 female) potential liver donors' during the 2014 - 2015 years. Liver MSCT with various standard renovations were used for more detailed visualization of blood vessels in each liver segment. Images were obtained on 64-slice MSCT (Aquilion; Toshiba Medical Systems, Tokyo, Japan). Interpretation of the results provided in accordance with embodiments of origin of the hepatic artery, portal vein anatomy and drainage of the hepatic veins.

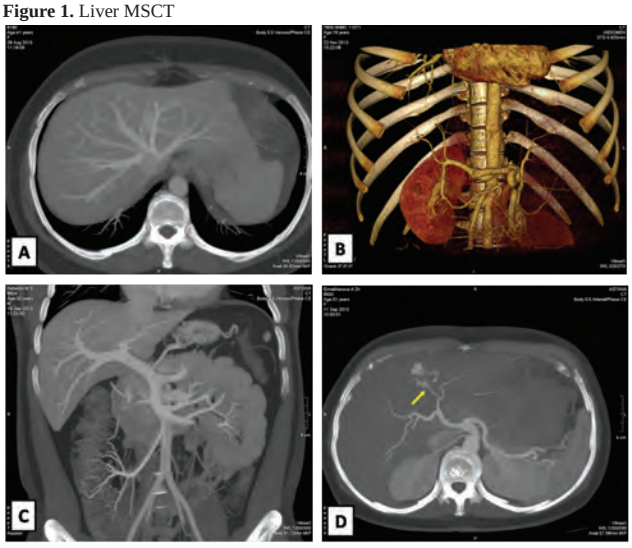
Results: The main results of the anatomy of the hepatic artery, portal and hepatic veins are shown in Table 1. Based on the MSCT of 39 donor's liver, 24 donors were identified as appropriate for donation. 15 donors were contraindicated for donation due to: in 8 - were signs of fatty infiltration, 2 donors - vascular anomaly of the portal vein, benign growths were detected in 5 donors.

Conclusions: MSCT is a primary diagnostic method for the preoperative planning of surgical resection of the liver, as well as preliminary identification of hepatic pathology. According to the results and experience of our center, in 61.5% cases, liver donors were selected for donation and remaining 38.5% of the donors were excluded from organ donation, in connection with the identified contraindications.

Table 1. The main results of liver MSCT

Description	No. of Patients (n = 39)	Frequency (%)
Arterial blood supply to the liver in the donor.		
Classic discharge of proper hepatic artery from the common hepatic artery dividing into right and left hepatic artery	25	64.1
Lack of self-hepatic artery	2	5.1
The presence of branches of the left gastric artery to the II and III liver segment	3	7.7
Participation of the superior mesenteric artery blood supply to the liver	0	0
Total hepatic artery departs from the superior mesenteric, no additional branches	6	15.4
The right lobe of the liver supplied with blood from the superior mesenteric artery, the left share is powered by the proper hepatic artery	1	2.5
The right lobe of the liver receives an additional branch of the superior mesenteric artery in the presence of the left and right hepatic artery with the classic division	2	5.1
Options for the branching of the portal vein of the liver donors		
Typical bifurcation of the portal vein	35	89.7
Trifurcation of the portal vein	3	7.7
The combination of the bifurcation of the portal vein to the presence of small branches	1	2.5
Options for the confluence of the hepatic veins into the inferior vena cava from the donor liver		
Separate relapsing right, middle and left hepatic veins	4	10.2
The presence of the right hepatic vein and the common trunk of the middle and left hepatic veins	32	82.0
Additional vein of the right lobe, including the self-draining into the inferior vena cava	12	30.8

Figure 1. Liver MSCT



(A) MIP- reconstruction image of normal hepatic veins of the donor in axial projection; **(B)** 3D- reconstruction image of normal hepatic artery and branches of the celiac trunk of the donor; **(C)** MIP- reconstruction image of normal portal vein of the donor in coronal projection; **(D)** MIP- reconstruction image of the arteries of the donor liver in axial projection with hemangioma (arrow) of the left lobe of the liver and supplying branch of the left hepatic artery.

O14

IS THERE A LINK BETWEEN PROTEINURIA AND INCREASED FGF-23 LEVELS IN RENAL TRANSPLANT PATIENTS

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Background: Fibroblast growth factor 23 (FGF23) has emerged as a risk factor for cardiovascular disease and mortality in renal transplant (RT) recipients. Post transplantation proteinuria is associated with reduced graft survival as well as an increased risk of cardiovascular events and death. We aimed to measure the relationship of serum FGF-23 with renal function, bone biomarkers, and proteinuria in RT patients.

Materials and Methods: A group of 160 RT recipients were included. Patients with increased creatinine levels were excluded. FGF-23 level was studied in every patient. Proteinuria (mg/day) of all patients was measured simultaneously with FGF-23. Last one year's parathyroid hormone, corrected calcium, phosphorus levels, office blood pressure measurements and demographic characteristics were also recorded from patient charts. Patients were divided into two groups according to median FGF-23 level: Group 1 (n:80) having high and Group 2 having low (n:80) FGF-23 levels.

Results: Groups were similar in means of demographic characteristics. Group 1 had higher phosphorus (p:0.045), parathyroid hormone (p: 0.03) and lower calcium (p: 0.04) levels. Proteinuria was significantly higher in Group 1 (1433 mg/d vs 269 mg/d, p:0.0001) while blood pressures were similar. A correlation analysis revealed that proteinuria was positively correlated with creatinine, FGF-23 and parathyroid hormone levels (p: 0.004-0.0001).

Conclusions: We suggest that increased FGF-23 levels appear to be independently associated with proteinuria and could be a potential biomarker in renal transplant recipients.

O15

TREATMENTS AGAINST RENIN-ANGIOTENSIN-ALDOSTERONE TEM COULD INFLUENCE FGF23 AND KLOTHO LEVELS IN RENAL TRANSPLANT RECIPIENTS

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Background: Angiotensin-converting enzyme inhibitor (ACEI) and angiotensin II receptor blocker (ARB) are frequently used in post transplant hypertension. Recent trials reported that renin-angiotensin-aldosterone system (RAAS) activation could trigger FGF23 and download Klotho synthesis, a mechanism that plays a role in their adverse influence on cardiovascular system. We cross-sectionally analysed the FGF23 and Klotho levels in a group of stable renal transplant patients

and searched for the influence of antihypertensive drug use on FGF23 and Klotho levels.

Materials and Methods: A group of 160 RT recipients were included (median age 52 years old, 67 female, post transplantation duration median 58 months). Patients with stable creatinine levels and no history of acute rejection episodes in last 12 months were included. Serum samples for FGF 23 and Klotho were obtained during routine follow-up controls. Subjects were grouped according to their antihypertensive use: ACEI/ ARB administered (n:78) and not using patients (none or any antihypertensive apart from ACEI/ ARB (n: 82).

Results: Two groups were similar in means of demographic characteristics, medications and creatinine and creatinine clearance levels. Calcium, phosphorus, CaxP and PTH levels were similar. Patients using ACEI/ARB had significantly lower FGF-23 levels (49.5 vs 91.9 pg/mL, p: 0.049) and Klotho levels were significantly higher in this group (14.2 vs 9.2 ng/mL, p: 0.04). FGF-23 levels were also positively correlated with PTH (r:0.221, p:0.049), creatinine (r:0.522, p:0.0001) and negatively correlated with calcium (r:-0.238, p:0.034) levels. Patients under ACEI/ARB treatment had significantly lower proteinuria (p: 0.03).

Conclusions: Posttransplant ACEI and ARB use is significantly associated with lower FGF23 and higher Klotho levels. We suggest that the beneficial influence of ACEI and ARB on long term graft function could take place through lowering these adverse prognostic markers.

O16

PREDICTIVE VALUE OF EARLY PERIOD DOPPLER ULTRASONOGRAPHY ON LONG-TERM ALLOGRAFT FUNCTION

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Background: Doppler ultrasonography is a useful, noninvasive diagnostic tool for the management and follow-up of the transplanted kidney. The measurement of intrarenal arterial resistance index (RI) by Doppler ultrasonography (DUSG) has been proven to reliably predict short-term allograft function. We evaluated the value of DUSG performed during the early post-transplant period to predict short and long-term renal allograft function in pediatric transplant patients.

Materials and Methods: We retrospectively analyzed clinical data, laboratory data and DUSG parameters of 70 (35 male, 35 female) renal transplant recipients. DUSG was performed at 3rd and 7th days after transplantation. A RI value <0.7 was considered as normal. Patients were grouped as normal graft function (NGF) and abnormal graft function (AGF). Abnormal graft function was defined as 30% increase of the creatinine level from the baseline value or need for dialysis.

Results: The mean age of patients was 13.6±4.0 years. The mean follow-up time of patients was 41.7±30.4 months. At 3rd day, 58.8% of patients with AGF had RI value ≥0.7, only 25% of patients with NGF had RI value ≥0.7. Also at 7th day while 74.7% of patients with AGF had RI value ≥0.7, only 26.9% of patients with NGF had RI value ≥0.7. BUN and creatinine level of patients with RI ≥0.7 were higher than that of patients with RI <0.7 at 3rd and 7th days. The RI values were correlated with the graft function at early post-transplantation period (p<0.05). RI values obtained by DUSG at 3rd and 7th days were not correlated with allograft function at 1 year and at last visit. The graft function at early post-transplantation

period was correlated with creatinine level at 1st year and with glomerular filtration rate at 1st year and last visit. The patients with AGF at early period after transplantation has higher creatinine level at first year and lower GFR at both 1st year and last visit than that of patients with NGF.

Conclusions: We demonstrated that RI is correlated with graft function at early period after transplantation. In addition, the graft function at early post-transplantation period has predictive value for long-term graft function. Patients with higher RI values at the early period after transplantation should be followed carefully for the development of chronic allograft dysfunction.

O17

WHAT IS THE IMPORTANCE OF LIVER BIOPSY FINDINGS ON PROGNOSIS OF KIDNEY TRANSPLANT PATIENTS?

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Background: Chronic hepatitis infection among kidney transplant recipients is not infrequent and especially Hepatitis C-infected kidney transplant recipients have worse survival. The aim of this study was to evaluate the liver biopsy changes and the effects on prognosis in kidney transplant recipients.

Materials and Methods: Patients with liver biopsies were selected from 1275 kidney transplant recipients who were treated at Başkent University from January 1990 to December 2012. Demographic and clinical findings were evaluated included age, sex, liver biopsy findings, amyloid and hemosiderin accumulation and, survival of the patients.

Results: There were 150 patients that have pre- or post-transplant liver biopsies. 108 of them were men, 42 of them were women. The mean age of the patients was 30.8±10.8 (range, 7-56 years). The 68 (45.3%) patients had pre-transplant liver biopsy, 61 (40.6%) patients had post-transplant liver biopsy, 21 (14%) patients had both pre- and post-transplant biopsies. The diagnoses of the liver biopsies were categorized as follows: normal/ non-spesific findings (n=18), hepatocellular damage and cholestasis (n=55), chronic non-viral hepatitis (n=21) and, viral hepatitis (n=56). In our study, amyloid accumulation was found the most important variable that reversely affected the patient survival ($p<0.05$). The overall 10-year survival rates were 36% and 83% in liver biopsies with amyloid accumulation and liver biopsies without amyloid accumulation, respectively. Statistically no difference were found in 3-, 5- and, 10-year survival in regards of hemosiderin depisition and diagnostic groups.

Conclusions: Although viral hepatitis is one of the most important cause of hepatic injury, our study revealed that it does not affect the patient survival in kidney transplant recipients. Amyloid accumulation in liver however was found the most important adverse variance for patient survival likewise in kidney transplant recipients.

O18

EFFECTS OF RENAL TRANSPLANT AGE ON THE GRAFT FUNCTIONS IN PEDIATRIC TRANSPLANT RECIPIENTS

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Background: Renal transplant is the best renal replacement therapy choice for children. It provides a long-term survival. Graft outcome can be affected by many factors. Transplant age is one of these factors. In this study, we aimed to evaluate the relationship between graft loss and age at renal transplant.

Materials and Methods: We retrospectively evaluated the data files from 141 pediatric renal

transplant patients (74 boys, 67 girls). Patients were divided into 2 groups according to the age of renal transplant. Patients younger than 12 years-old are considered as children group (47 patients) and older than 12 years-old are considered as adolescent group (94 patients). Demographics of the patients, etiology of chronic renal failure, donor type, acute rejection episodes and graft loss were recorded.

Results: 110 patients received a living-related donor allograft and the remaining 31 patients received the allograft from a deceased donor. Gender (22 boys/25 girls for children group and 52 boys/42 girls for adolescent group) and mean follow-up time (63.70±44.88 months for children group, 64.29±45.23 months for adolescent group, p=0.94) of two groups were similar. There was any significant difference for donor type and acute rejection episodes between two groups. 17 patients (12.1%) were lost their graft during follow-up. 15 (16%) of these patients were in adolescent group and the remaining 2 (4.3%) patients in children group. Graft loss was significantly higher in adolescent group (p<0.05).

Conclusions: We demonstrated that adolescents has poorer graft outcome. It may be related to different risk factors such as primary disease, immunosuppressive non-adherence. These risk factors must be evaluated for each patient, especially at adolescence ages.

O19

THE CHANGING CHARACTERISTICS OF ADULT LIVER TRANSPLANT WAITING LIST IN BAŞKENT UNIVERSITY

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Background: The observation that some demographic and disease related characteristics of the adult patients in liver transplantation waiting list might have been changed in the past decade led us to look this characteristics.

Materials and Methods: We reviewed the electronic medical records of adult chronic liver disease patients who were added to the liver transplant waiting list of Başkent University Ankara Hospital between January 2011 and December 2015.

Results: A total of 180 candidates were added to the liver transplant waiting list during this period. Male are twice as much as females (122 vs. 58). Data on recipients show a continued trend toward older ages; 25 (13.8%) of all adult recipients are aged 65 years or older. The oldest is 74. Of these elderly patients 8 of 58 (13.7%) are females and 17 of 122 (13.9%) are males. The highest percentage of elderly is in NASH patients (11 patients, 20.7%). Hepatitis B virus (HBV) remains the most common single diagnosis with 67 (37.2%), followed by nonalcoholic steatohepatitis (NASH) or cryptogenic (probably NASH) with 51 (28.3%), hepatitis C virus (HCV) with 14 (7.7%), extensive alcohol consumption with 11 (6.1%) and miscellaneous causes with 20 (11.1%). There are 31 (17.2%) patients with hepatocellular carcinoma (HCC). The commonest cause of HCC is HBV with 18 cases.

Conclusions: The leading cause of chronic liver disease in Turkey has traditionally been HBV infection (38 – 48%). Although the numbers of elderly and NASH patients are rising, HBV is still the major cause of end stage liver disease in our registry. The other important observation is that the number of patients with HCC is higher than earlier.

O20

CHANGES OF DENTAL INDEXES AND LEVEL OF IFN-J IN THE DYNAMIC OF COMPLEX TREATMENT TERMINAL STAGE CHRONIC RENAL DISEASE AND SECOND TYPE DIABETES ON PROGRAM HEMODIALYSIS

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Our purpose was to explain the conduction of immunocorrective therapy on the basis of study biomarker IFN-γ in saliva among the patients with catarrhal gingivitis under terminal stage chronic kidney disease with second type diabetes.

Clinical researches and determination of IFN-γ cytokine level were conducted among 24 patients. Before treatment among the patients with catarrhal gingivitis PHP indexes decrease and PMA, KPU increase noted. These changes are accompanied by decrease of IFN-γ concentration in saliva. Conduction of oral cavity professional hygiene (first group) and use of antibacterial conditioners lead to improvement of oral cavity hygiene condition and slight growth of IFN-γ in saliva.

In second group after professional hygiene of oral cavity, use of antibacterial conditioners and appliques by stimulated leukocytes dental indexes data changes statistically significantly concerning of data before treatment. By the basis of development dental indexes changes after complex treatment conduction is decrease of activity inflammatory processes in periodontal tissues and increase of IFN-γ level.

O21

DECOMPRESSION OF LEFT VENTRICLE DURING VENOARTERIAL EXTRACORPOREAL MEMBRANE OXYGENATION SUPPORT AS A STEP TO TRANSPLANTATION

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Background: Left ventricular distention can be recognized during the use of venoarterial extracorporeal membrane oxygenation, as one of the important complications. Left ventricular decompression may decrease pulmonary pressure, minimize ventricular distension, and allow myocardial recovery.

Materials and Methods: We applied venoarterial extracorporeal membrane oxygenation to four of our patients on the way to the cardiac transplantation while they were in the waiting list.

Results: Two of them with severe heart failure were developed high end-diastolic pressures leading to left ventricular distention. We used atrial venting methods to decrease the pressure.

Conclusions: Here we discussed the strategies to manage ventricular distension by conservative, interventional, and surgical means.

O22

LEPTIN LEVEL IN PATIENTS WITH TYPE 2 DIABETES MELLITUS AFTER FETAL PANCREATIC STEM-CELL TRANSPLANTATION

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Background: Leptin is a peptide hormone secreted by fat cells and involved in regulating of energy metabolism and body weight. According to some studies, in patients with diabetes mellitus (DM) type 2 a high leptin level may be caused by hyperinsulinemia and insulin resistance. Leptin level has a positive correlation with levels of insulin and proinsulin. Therefore, the dynamics of leptin level in patients with DM type 2 after transplantation of fetal pancreatic stem-cell (FPSC) is considered to be a scientifically interesting subject.

Materials and Methods: Leptin levels in 11 patients with DM type 2 after FPSC (cells were16-18 week gestation) performed by an intravenous infusion and in 5 patients with DM type 2 of control group were surveyed with use of ELISA method with the help of ChemWell analyzer before FPSC transplantation and 6 months after transplantation.

Results: Prior to FPSC transplantation the mean leptin levels in both groups of patients with DM type 2 were, respectively, 8.44 ng/ml and 25.95 ng /ml ($p = 0.05$). After 6 months in the group of patients with DM type 2 who got FPSC transplantation, leptin level increased to 9.09 ng/ml. In the control group of patients with DM type 2 the level decreased to 23.11 ng/ml, respectively ($p = 0.0097$ between groups).

Conclusions: Thus, in patients with type 2 DM after 6 months of FPSC transplantation a significant increase of leptin level noted in comparison with the group of patients with type 2 DM who did not undergo FPSC transplantation

O23

ABORTED TOTAL PAN CTOMY WITH AUTO ISLET CELL TRANSPLANTATION FOR CHRONIC PANCREATITIS

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Background: Total pancreatectomy (TP) with islet autotransplantation (AIT) has been recognized as an effective treatment option for patients with inactive chronic pancreatitis (CP). Severe cases of CP occasionally develop dense adhesions among chronically inflamed pancreas and peri-pancreatic tissue, which potentially cause abortion of TP.

Materials and Methods: We performed a retrospective review of all patients who were selected for TPIAT since October 2006 at our institution. Main indication for TPIAT includes patients with established diagnosis of CP, narcotic dependence for severe abdominal pain due to CP, history of failed endoscopic treatments and positive serum C-peptide during glucose tolerance test.

Results: In a total of 108 chronic pancreatitis patients who were admitted for TPIAT, completion of total pancreatectomy was aborted in 8 cases (7.4%). The reasons were extensive adhesions at peri-pancreas tissue (n=6), findings of acute inflammation such as edema (n=5; for patients showed mixed pancreatic lesion with dense adhesion involving peri-pancreatic tissue and acute inflammation) and liver cirrhosis that was macrographically identified in the operation (n=1). Four patients with aborted TP (or 50%) had a history of acute necrotizing pancreatitis, significantly higher when compared to the control group without cancellation of TP (50% vs. 12%, p=0.0146).

Seven patients (or 87.5%) had past history of distal pancreatectomy or surgical debridement of pancreatic tail in aborted TP group, while past

history of pancreatic surgery was found in 13 out of 100 (or 13.0%) in the control group, (p=<0.0001). No operative mortality was reported in both aborted TP and completed TPIAT groups. Three patients in aborted TP group underwent a second surgery of TPIAT after resting gastrointestinal rest with tube feeding for number of days.

The median weight of procured pancreas in the TP aborted patients was 99.2 g (interquartile range=83.3-110.3) and the median weight of procured pancreas in the control group was 83.7 g (interquartile range=66.2-100.6). The TP aborted group was isolated with a median islet mass of 1335 IEQ/kg (range: 859-2599) and for the control group the median islet mass was 5039 IEQ/kg (interquartile range=2879-6349). A patient in the TP aborted arm achieved insulin independence while the other two have been treated with insulin pump or long-acting insulin injection.

Conclusions: TPIAT is performed for selected patients with refractory CP. TP could not be completed in 7.4% of the patients due to mainly strong adhesion among peri-pancreatic tissue or prolonged inflammation. Male patients (87.5% vs. 30%, p-value=0.0022), high BMI (32.1 vs. 25.7, p-value=0.011), previous history of pancreatic surgeries (85.7 vs. 13.0, p-value<0.0001), of abdominal surgeries (100.0% vs. 58.0%, p-value=0.0217) and , history of acute necrotizing pancreatitis (50.0% vs. 12.0%, p-value=0.0161) are factors associated with aborted TP. TPIAT can recover islets even when the pancreas is severely inflamed but the patients should be carefully followed up for a sufficient period of time to rest the gastrointestinal tract.

O24

DO SURGICAL COMPLICATIONS ADVERSELY AFFECT TOTAL PAN CTOMY WITH ISLET CELL TRANSPLANTATION OUTCOME?

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Background: Total pancreatectomy and islet auto transplantation (TPIAT) is a promising treatment option for chronic pancreatitis (CP) patients who have intractable pain. However, this procedure has many challenges due to high rate of morbidity. Our aim in this study was to determine the effects of postoperative complications in TPAIT patients and their impact on islet cell functioning.

Materials and Methods: The Baylor Transplant Institute patient database was queried to identify all patients undergoing TPIAT from 2006 to 2015. Moreover, the database was queried for demographics, preoperative risk factors, intraoperative variables, and 30- and 90-days postoperative morbidity and mortality. Eighty-three patients with CP and at least 1 year follow-up were included in this study. All patients previously diagnosed with CP were evaluated by a multidisciplinary team. The indications for surgery were intractable pain despite previous medical and surgical intervention. Total pancreatectomy was performed in all patients and isolated islets were infused into the portal vein via the mesenteric vein with heparin (70 U/kg body weight) while the patient was under general anesthesia. The average daily insulin requirement, HbA1c and C-peptide levels were measured before surgery, on hospital discharge, and at each subsequent postoperative patient encounter. Narcotic requirements were reported as morphine-equivalent quantity per day (MEQ/d) calculated from narcotic conversion software. Adverse events

(AE) were recorded and graded using the Common Terminology Criteria for AE in total pancreatectomy and Islet autotransplantation. Overall postoperative complication detected and graded according to Clavien-Dindo classification.

Results: There was no mortality in this patients group. The postoperative complications occurred in 38 patients (45.7%). Our study shows that patients with postoperative complications where readmitted significantly more often within 30-day (39.5% vs. 13.3%, p-value=0.0104) and 90-day post-transplant (76.3% vs. 35.6%, p-value<0.0003), had a significantly longer hospital stay (median 12 vs. 11 days, p-value=0.004) and ICU stay (median 1 vs. 2 days, p-value=0.001).

Conclusions: Insulin dependence and graft function have not been affected significantly by complications. Postoperative complications showed a tendency to increase narcotic requirements in the postoperative period, although this result is not statistically significant. Postoperative complications after TPIAT procedure are associated with long hospital and ICU stay, and high rate of readmissions.

O25

EARLY VASCULAR COMPLICATIONS AFTER PERIPHERAL EXTRACORPOREAL MEMBRANE OXYGENATION SUPPORT

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Background: Extracorporeal membrane oxygenation (ECMO) is a well-established treatment for severe cardiopulmonary failure. This support serves as a bridge to recovery, heart transplantation or ventricular-assist device implantation. It can be implanted either through a percutaneous approach using Seldinger's technique or via an open approach via the common femoral artery. A serious complication of femoral cannulation remains the ischemic injury of the distal limb. In this retrospective study we report our initial experience of limb ischemia with percutaneous venoarterial extracorporeal membrane oxygenation.

Materials and Methods: 32 patients undergoing percutaneous venoarterial ECMO under emergency circumstances between January 2014 and January 2016 were identified. The implantation technique employed the Seldinger's technique for both arterial and venous cannulae. In all patients, the superficial femoral artery (SFA) was cannulated prophylactically and perfused in the antegrade direction from a branch of the ECMO circuit.

Results: Four patients developed a compartment syndrome of the leg requiring urgent fasciotomy and additional cannulation of the SFA with branching of the ECMO circuit that led to clinical improvement and recovery. We experienced no limb loss during follow-up**.** No long-term vascular complications were noted

Conclusions: The majority of ischemic episodes were resolved with the insertion of an appropriate sized distal perfusion catheter. This technique of distal limb perfusion was found to be safe and effective in preventing lower limb ischemia for patients with femoral cannulation for extracorporeal circulatory support. Prophylactic or expectant SFA cannulations are reasonable approaches. Vascular complications after ECMO support are not associated with higher mortality rates.

O26

ULTRASTRUCTURAL FINDINGS AND CAPILLARY HLA-DR EXPRESSION IN RENAL ALLOGRAFTS WITH HUMORAL, VASCULAR AND TUBULOINTERSTITIAL REJECTION: CORRELATION WITH DEVELOPMENT OF TRANSPLANT GLOMERULOPATHY

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Background: The impact of early ultrastructural (US) changes of biopsies with the diagnosis of acute rejection that is causing transplant glomerulopathy (TG) was evaluated in very few studies. Relationship of capillary HLA-DR expression with the parameters that give rise to develop TG were not studied. With this purpose we evaluated the early and late US changes of 52 renal allografts and we compared these findings with the results of capillary HLA-DR expression.

Materials and Methods: Acute tubulointerstitial rejection (ATR), acute vascular rejection (AVR), acute humoral rejection (AHR), and chronic humoral rejection (CHR) were found in 12 (23%), 12 (23%), 14 (27%) and 14 (27%) patients, respectively. All biopsies (n:38) except cases with CHR (n:14) were taken within 3 months of Tx. Peritubular capillary HLA-DR (PTC-DR) and glomerular HLA-DR (GDR) expression was evaluated. Lower intensity of PTC-DR was considered to indicate more extensive PTC destruction. Follow-up biopsies of 38 cases with variable AR were evaluated for the development of TG.

Results: US changes including glomerular and PTC endothelial swelling and multilamellation, glomerular subendothelial widening and early GBM duplication was found to be highest in biopsies with AHR compared to biopsies with ATR and AVR ($p<0.001$). Biopsies with AVR and ATR were followed AHR respectively for the presence of these US changes. Biopsies with CHR showed highest degree of multilamellation and double counter. The loss of PTC-DR expression therefore the destruction of PTC was found highest in biopsies with AHR and CHR compared to biopsies ATR and ACR ($p<0.001$). TG was developed 8.3%, 33.3% and 57.1% in patients with ATR, AVR and AHR respectively ($p=0.01$). The development of TG was 45.5±9.2 months in ATR cases, 20.7±8 months in AVR cases and 7.2±3 in AHR cases ($p<0.001$). Glomerular and PTC endothelial swelling and multilamellation, glomerular subendothelial widening and early GBM duplication showed a great impact on the development of TG ($P<0.01$ for all). GDR showed positive relationship with development of TG ($p<0.001$). PTC-DR had a negative association with TG ($p<0.001$). The risk of TG development increases with decreasing expression of PTC-DR ($p<0.001$). Therefore the severity PTC destruction had a significant impact on the development of TG. In addition PTC-DR and GDR had significant association with all US findings ($p<0.01$ for all).

Conclusions: Analysis of early US changes and capillary HLA-DR expression are helpful for predicting the development of TG and graft prognosis. This type of assessment may be useful for determining the patients' with the risk of TG and chronic rejection and thus identifying the most appropriate treatment.

O27

LEUK LA AND NEUTR LA AS A COMPLICATION OF TRANSARTERIAL CHEMOEMBOLIZATION

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Background: Transarterial chemoembolization (TACE) is widely used as an effective bridging/ downstaging strategy for patients with hepatocellular

carcinoma waiting for a liver transplantation. The common complications of TACE are vascular complications such as arterial injury, non-target embolization, access site injuries, pulmonary embolization, and non-vascular complications such as postembolization syndrome which is manifested by fever, malaise, right upper quadrant pain, nausea, and vomiting. Sistemic toxic effects of the chemotheruepotic substances such as alopecia, myelosuppression, leukopenia, and anemia, infection, biliary strictures, hepatic failure, variceal bleeding, and renal failure may also be encountered. The aim of this study was to investigate neutropenia and leukopenia seen as complications of TACE in our series.

Materials and Methods: Fifteen patients with HCC waiting for liver transplantation in Baskent University Transplantation Center were included in the study. At least one session of TACE procedures performed to all. TACE was performed through selective cannulation in the artery feeding the tumor. The emulsion comprised of iodized oil (Lipiodol; Andre Guerbet, Aulnay-sous-Bois, France) and a chemotherapeutic drug either doxorubicin (100 mg, 13 patients) or epirubicin (50 mg, 2 patients). The total leukocyte and neutrophil counts were recorded before and seven days after the procedure.

Results: Of these 15 patients 12 (80%) were males and 3 were females (20%). The median age was 63.8 (between 48- 77) years. Late onset leukopenia and neutropenia (leukocytes >4,000/μL and neutrophil >2,000/μL) developed in 4 patients who doxorubicin was used. Treatment with a granulocyte colony-stimulating factor (Neupogen®) was needed in 3 patients. Leukopenia and/or neutropenia was not seen in patients who epirubicin was used.

Conclusions: The incidence of HCC has increased significantly in recent years. TACE continues to be a bridge to transplantation in patients unsuitable surgical resection. Severe and life threatining complications may be seen after TACE procedure. Leukopenia and neutropenia due to myelosuppression caused by the chemotherapeutic agents used are amongst such complications and should be considered.

P1

THE EFFECTS OF DIFFERENT RELIGIOUS PERSPECTIVES ON ORGAN TRANSPLANTATION AND ATTITUDES TOWARD ORGAN DONATION

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Background: Organ transplantation saves a large number of lives. However, the organ donations numbers are not generally satisfactory despite different amounts of donations throughout the world. The ethical, cultural and religious constraints limit the availability of organ donations. This study includes data from the first step of a three-year student study group project, which aims to investigate the religious, legal and medical factors affecting organ transplantation and donation tendencies. Our aim was to evaluate the perception of organ transplantation according to Islam, Christianity, Buddhism and Judaism and to compare common or different modalities.

Materials and Methods: The data presented are the results of the project conducted by the Baskent University School of Medicine, Class I Transplantation Immunology Study group as a part of a three year long project. A comprehensive literature search has been performed including books, peer-reviewed journals and articles, seminars and presentations to obtain a detailed insight regarding the importance of organ transplantation, the rules of organ transplantation in different countries and the interpretation of organ transplantation concept in four major religions. A through comparison of these religions on organ transplantation concept was done to underscore the common or different point of views.

Results: Following the evaluation of data and available text, it has been concluded that the sacredness of human life, spiritual satisfaction to help people and social benefits are the common theme in both eastern and western religions, particularly in these four religions which were assessed. This belief supports organ donation and organ transplantation. However, the dignity of human body and the belief of afterlife as well as the uncertainties for the definition of death and brain death limit the organ donation. Non-pecuniary damages or other money exchanges during organ donation are usually evaluated according to the rules of faith, which mostly prevents these illegal money payments.

Conclusions: It was found that preaches of the religious functionaries aiming public education public on organ donation was considerably effective. Thus, families or relatives were more comfortable to give consent for organ donation when approved by religious authorities.

P2

BRAIN DEATH AND TRANSPLANTATION IN ISLAMIC COUNTRIES

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Countries with at least 50% of their population belonging to Islam religion may be called Islamic states. Muslim countries constitute the world's second largest religious group. It is estimated that there are 1.6 billion adherents making up over 22 % of the world population. Islamic countries are geographically located in Northern Africa, the entire Middle East except Israel, partly in Central Asia and in the Far East; Indonesia and Malaysia.

The Koran states that saving the life of one person is as great a charity as saving the life of the whole humanity. Sheikh Hassanein Makhlouf, the Grand Mufti of Egypt, allowed corneal grafting in 1952. Many Fatwas from different countries followed, which paved the way to the transplantation of other organs. The Third International Conference of Islamic Jurists organized in Amman in October 1986 agreed upon Resolution No. 5 which considered brain death

practically similar to cardiac death. In Turkey, the Directorate of Religious Affairs has clearly stated that Islamic belief does not interfere with cadaveric organ transplantation. The religious support should be continuous, muftis and other religious officials should work in cooperation with medical teams and government officials to inform the general public about the concept of brain death and the importance of organ donation from deceased people.

A study in the Tabuk area of Saudi Arabia has revealed that end-stage renal disease is 460 cases per million population and 17 % of those patients have been treated by kidney transplantation. A similar study from El-Minia Governorate of Egypt has shown that the incidence of end-stage renal disease is 308 cases per million population and only 1% of this group is treated by transplantation. In general, Arab countries have a high prevalence of chronic kidney disease.

It has been reported that in 22 Islamic countries of sub-Saharan Africa, living donor kidney transplant was performed only in Sudan and Nigeria. Deceased donor organ transplant has been considered illegal in that geographical area.

The average renal transplantation for end-stage renal disease in Northern African countries is less than 5 %. In Algeria, the first two cadaveric renal transplants have been performed on March 31, 2010.

A research from Libya has found considerable resistance to organ procurement from deceased. The resistance was more prominent among females, elderly, those with low education. Concerns about religious implications, the lack of adequate knowledge, and the unease about body manipulations were the main reasons. A study from Morocco has shown that the limited number of renal transplantations was related to the lack of human and material resources and the limited pool of living donors.

The above figures clearly illustrate that transplantation is still in its early stage in many Islamic states. The pioneer countries like Turkey, Iran and Saudi Arabia are expected to share their experience and know-how with the countries which need help. A good example to such cooperation is the relationship between Turkey and Kazakhstan.

P3

CURRENT PROBLEMS OF ORGAN TRANSPLANTATION IN THE KYRGYZ REPUBLIC

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According to the national registers of different countries, the frequency of newly diagnosed cases of end-stage renal failure (ESRF) is steadily growing in recent years. Kyrgyzstan in this regard is not an exception, thus today there are 449 people under chronic long-term hemodialysis, and 984 patients are waiting for their turn for dialysis. There are solutions to the problems of dialysis and transplantation. However, transplantation can be divided into moral, ethical, legal, medical and organizational issues.

P4

OPTIMIZATION AND CONTROL OF POSTTRANSPLANTATION IMMUNOSUPPRESSION

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Background: Control of posttransplantation immunosuppression (CPI) is one of the most important, complex and urgent problems of modern transplantology. According to the International Society of Heart and Lung Transplants 2012 (ISHLT) there are currently more than 40 invasive and non-invasive techniques to determine the quality and behavior of posttransplantation immunosuppression, but the most reliable, efficient and economically affordable methods have not been developed yet.

Today, there is no "perfect" and at the same time standard mode of immunosuppression after organ transplantation including kidney. This is confirmed by the use of a variety of combinations of already

known and new immunosuppressive drugs in different transplant centers.

Initial immunosuppression covers the first 3 months after transplantation, which are characterized by unstable graft function and increased alloreactivity with the maximum probability of rejection episodes. During this period immunosuppressive task is to prevent and treat early rejection at minimal risk of additional damage source already affected by ischemia/reperfusion of the donor organ. Cyclosporine and tacrolimus are characterized by marked side effects, endangering for the transplanted organ and for a patient. Of even greater importance is that both drugs are nephrotoxic (level of evidence 1A) and at long-term use are the primary cause of kidney dysfunction, as a result leading to graft loss or irreversible changes of the kidney.

Materials and Methods: The basis of this study is an extended study of the world and homeland experience on control of posttransplantation immunosuppression in modern conditions.The research subject of this work are the patients after transplantation. As immunosuppressive drugs were taken: Prograf (tacrolimus), Sandimmun Neoral (Cyclosporine), CellCept (Mycophenolate Mofetil), Myfortic (Mycophenolic Acid). Immunosuppression induction therapy: took Prograf, CellCept was taken by 83 (54.6%) patients; Sandimmun Neoral, CellCept – by 32 (21%) patients, Prograf, Myfortic – by 29 (19%), Sandimmun Neoral and Myfortic – by 8 (5.3%). Constant monitoring of creatinine and BUN values in blood serum was conducted.

Results: Main obtained results are presented in Table 1. Therapeutic drug monitoring (TDM) of cyclosporine A showed that 70% of patients on the 4th day stable blood concentration in the amount of 200-300 ng/ml is set, required to achieve maximal immunosuppressive effect and the existence of minimal side effects from this drug.

It is necessary to note a clear dependence of the determined concentration of drug in the whole blood on the injected dose. The minimum level of concentration (BTL) before the next introduction was 187.3 ng/ml at the examination beginning; on saturation of the drug in the first month of TDM this level increased to 351.3 ng/ml, then the third and the sixth month of monitoring the level of BTL steadily decreased to 237.1 and 206.8 ng/ml, respectively. The maximum concentration (Cmax) had a similar dynamics, i.e. was 1123.5 ng/ml at the axamination beginning, 1224.8 ng/ml – in the first month, gradually decreasing to 835 and 732 ng/ml to the third and the sixth month of monitoring. Tmax - time of occurrence of maximum concentration was 2.2 hours at average.

Constant monitoring of indicators of nephrotoxicity (creatinine, BUN, uric acid in the blood, creatinine in urine) showed a reduction of the high numbers of these indicators to normal level within 10-30 days after transplantation. It should be noted that in 50% of patients decrease of the creatinine level up to 90-100 μm/l was observed on the 10^{th} day after allogeneic kidney transplantation (AKT), and 30% of patients on the 14^{th} day after AKT; in 80% of patients urea level in blood decreased on 25-30^{th} day after AKT and was 7-8 mm/l, uric acid decreased in 70% of patients on the 14-20^{th} day to the level of 240-380 mm/l, creatinine level in urine during the whole monitoring was within normal limits. Over the next 6 months these parameters remained within the normal range, this indicates not only the effective work of the transplanted kidney, but that the drug CON (in capsules) was administered in the right dosages.

Conclusions: The mortality was 8 (5.2%) (from 1999 to 2015 (average annual mortality was 0.3%), after kidney transplantation - 5(62.5%), after liver transplantation - 3 (37.5%), 10 year survival rate – 10 (6.5%), 5 year survival rate – 33 (21.7%). Acute rejection - 3 (1.97%), chronic rejection - 11 (7.2%), acute hepatic insufficiency after kidney transplantation - 1 (0.7%), generalized CMV infection - 1 (0.7%).

P5

THE MOST COMMON HLA ALLELS AND ANTI HLA ANTIBODIES: IT IS IMPORTANT TO KNOW FOR VIRTUAL CROSS-MATCH

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Background: HLA antigens and HLA specific antibodies are important before and post transplantation menagement. The aim of the retrospective study was to investigate HLA class-I and class-II allele and PRA pozitivity frequencies in Southeastern region of Turkey.

Materials and Methods: Tissue typing for HLA class I (-A, -B,-C) and class-II (-DRB1,-DQB1) in patients (n:1756) and donors (n:2951) who applied Baskent University Adana Research and Medical Center (between 2010 and 2015) for transplantation, were studied using sequence-specific primers (SSP) and/or sequence-specific oligonucleotides (SSO). Sera samples were analysed by LUMİNEX bead technology for antibody detection.

Results: In this study, HLA allele frequencies were determined initially in 4700 cases. These data were important for the allele distribution in the region. Class-I HLA A*02 , A*, A*, B*35, B*51, B*44, C*04, C*07, C*12 and Class-II HLA DRB*11, DRB*01, DRB*04, DQB1*03, DQB1*05, DQB1*06 are the most common three alle southeastern region in Turkey. PRA class-I and -II definitions were analyzed in transplant candidate patients and MFI values above 2000 were identified. For PRA Class-I A 02, A68, A23, B49, B37, B7 Class-II DR 7, DR 14, DR11, DQ9, DQ8, DQ2. The three most common HLA alleles and Anti-HLA antibodies were compared with each other and (except HLA-A*02, A2) no correlation between allele and PRA frequencies was identified (Table 1). Following this analysis, antibodies were analyzed by LSA in PRA-positive group. A positive correlation between PRA and LSA could not be detected. However, there was a weak correlation between PRA MFI scores 5000 and above with LSA. Of note, the presence of class-II DQB1 antibody significantly affects PRA definitions.

Conclusions: To evaluate the PRA class-II positivity along with LSA and MFI values should increase the potential of transplant in patients with high PRA levels who are in the upper ranks of cadaver waiting list.

Table 1: The most common HLA alles and anti HLA antibodies

Most common HLA allels	% Value	Most common Anti HLA antibodies	% Value
Class-I		**Class-I**	
A*02	%33.7	A 02	% 39.2
A*24	%27.1	A 68	% 33.3
A*02	%22.7	A 24	% 31.4
B*35	%31.3	B49	% 37.3
B*51	%23.5	B7	% 33.3
B*44	%12.8	B37	% 31.4
C*04	%20.8	Cw4	% 9.8
C*07	%19.5	Cw6	% 9.8
C*12	%17.0	Cw1, Cw2, Cw7, Cw16	% 5,9
Class-II		**Class-II**	
DRB*11	%46.1	DR 7	%34
DRB*01	%29.8	DR 14	%34
DRB*04	%29.4	DR 11	%31.9
DQ*03	% 56.1	DQ9	% 53.2
DQ*05	% 29.5	DQ8	% 44.7
DQ*06	% 22.5	DQ2	% 34.0

P6

ALLOGRAFT SURVIVAL RATE AND ANALYSIS OF PREDICTOR FACTORS IN KIDNEY TRANSPLANT RECIPIENTS LIVING DONORS

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Background: Renal transplantation is the modality of choice for renal replacement therapy in the majority of end stage renal disease patients. The aim of this study is to determine graft survival rate and possible related factors in 273 living donor renal transplant recipients in the same center from 1999 to 2010.

Materials and Methods: Organ survival and demographic characteristics and variables that may affect graft survival rate were evaluated in all renal allograft recipients in Razi Hospital of Rasht in North of Iran. Chi-square, Independent T-Test and Mann-Whitney were used for analysis of urivariates. Survival rate was estimated by "Kaplan-Meier method", and Tarone-Ware test were applied for comparing survival rates. Multivariate analysis was also done by COX regression model.

Results: In this study, 1, 5 and 10 year graft survival rates were 92.6±1.6, 88±2.1 and 77.5±3.9%, respectively. The mean age of donors and recipients was 30.43±5.99 and 39.09±13.02, respectively. 95.6% of donors and 60.7% of recipients were male who have been followed for 10 years after renal transplantation (RT). Delayed graft function was significantly correlated with graft survival rate (P<0.001). Furthermore, It was the only statistically significant predictor of graft loss (P<0.001). Worse graft survival rate was observed in patients with diabetes (P<0.018).

Conclusions: Although the survival rate in our center is comparable with the reports of other great centers in the world, focusing on Modification of some variables may improve transplant outcomes.

Table 1. Comparison of distribution of quantitable variables according to survival or non-survival graft

Variables	Non-Survivor (Mean±SD)	Survival (Mean±SD)	P
Body mass index (kg/m2)	25.87±6.07	25.71±4.52	0.92
Doner age (year)	31.71±7.11	30.22±5.77	0.58
Recipient age (year)	37.78±13.77	39.31±12.93	0.49
Creatinin (mg/d)	2.13±1.62	1.23±0.30	0.0001*

**Considered significant by (P<0.05)*

Table 2. Influence of different factors on 1-,5- and 10-year graft survival rate

Variables	n	Censored (%)	1-year graft survival	5-year graft survival	10-year graft survival	Mean±se survival Time (year)	p-value**
Sex							
Female	104	93(89.46)	91.3±2.8%	87.7±3.8%	87.7±3.8%	10.78±0.38	0.51
Male	165	137(83.0)	93.9±1.9 %	85.5±3.1%	71.4±5.7%	9.94±0.39	
Panel reaction test							
0%	238	205(86.1)	94.1±1.5%	89±2.2%	77.1±4.3%	10.38±0.31	0.23
≥10%	29	24(82.8)	82.8±0.7%	82.8±0.7%	82.8±0.7%	9.45±0.79	
CMV status							
+	264	225(85.2)	94.7±1.4%	86.9±2.3%	77.2±3.9%	10.38±0.39	-
–	5	5(100)	-	-	-		
DGF							
+	18	11(61.1)	50.8±9.8%	42.4±11.2%	-	5.46±1.06	0.001*
–	229	204(89.1)	97.1±1.1%	91±2.2%	81.4±4%	10.76±0.28	
Diabetic	23	18(78.3)	79.6±7.4%	73.9±8.8%	66.5±10.6%	8.58±0.94	0.018*
Non diabetic	246	212(86.2)	94.1±1.5%	88.8±2.3%	78.9±4.2%	10.39±0.29	

***** Considered significant by (p<0.05)

** Tarone-ware test

Table 3. Predictors of graft loss according to cox regression model

Variables	Regression. co	SD	df	HR	P	95% CI
Donor age	.049	.028	1	1.050	.078	.995-1.109
DGF	2.179	.350	1	8.836	.000*	4.452-17.535

* Considered significant by (p<0.05)

Poster

P7

THE ASSOCIATION BETWEEN ATORVASTATIN AND TOTAL PLASMA HOMOCYSTEINE LEVELS IN RENAL TRANSPLANT RECIPIENTS IN NORTH OF IRAN

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Background: Statins improve prognosis in patients with coronary heart diseases by decreasing the incidence of vascular events. Excess prevalence of hyperhomocysteinemia, an independent risk factor of cardiovascular diseases, has been observed in stable renal transplant recipients (RTR). The objective of our study was to evaluate the association between plasma total homocysteine (tHcy) levels and atorvastatin in RTRs.

Materials and Methods: We performed a retrospective cross-sectional study in 148 cyclosporine treated stable RTRs. We compared tHcy level in RTRs with and without atorvastatin.

Results: Mean tHcy levels were lower in patients with atorvastatin (20-40 mg/day) compared to nonusers (15.06±5.65 µmol/L, 17.91±10.85; *p*= 0.04). The comparison of the group of 86 patients with atorvastatin and 62 non-users revealed that those subjects with atorvastatin were older, with higher HDL levels, eCrCl and BMI. They were more likely to have diabetes, higher systolic blood pressure and CsA trough level (C0). The association between lower tHcy levels and atorvastatin was confirmed in the multivariate regression model (P=0.004). However tHcy levels were negatively associated with serum folate (P=0.0001) and vitamin B12 levels (P=0.001) and positively with serum BUN (P=0.0001) and diastolic blood pressure (P=0.024) as well.

Conclusions: These data support the association between lower tHcy levels and atorvastatin usage in RTRs. Further clinical trials are recommended to clarify homocysteine lowering effect of atorvastatin.

Table: Regression coefficient of effect of atorvastatin usage on Hcy level according to multiple linear regression models

Model	β Coefficients± SE	t	P	95% Confidence interval for β
Constant	12.22±2.06	5.93	.000	8.15 to 16.29
Atorvastatin	2.85±1.37	2.08	.040	0.14 to 5.59

SE, Standard Error

P8

RESULTS OF MICROBIOLOGIC MONITORING OF KIDNEY TRANSPLANT RECIPIENTS BEFORE TRANSPLANTATION

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Background: Drug immunosuppression, traditionally held to minimize autoimmune developments of chronic liver disease, kidney, heart, lung, and provides for the appointment of high doses of corticosteroids, creates favorable conditions for the development of various infectious processes, and the existence of pathogens, which can be activated after transplantation. This study aims to investigate the bacterial pathogens in patients before living donor kidney transplantation

Materials and Methods: We prospectively investigated 117 clinical samples of 33 patients during 2015 at National Scientific Research Center in Astana (Kazakhstan) before living donor kidney transplantation. Clinical samples included: sputum samples, swabs from throat and nose, urine samples from these patients were collected for quantitative microbiologic examination. Identification of isolates and antibiotic susceptibility testing were performed using the Vitek 2 automated system (BioMérieux, France).

Results: There were 22 male, 11 female patients with a median age 34.7±2.7 years. During the study period 117 clinical samples were cultured. Altogether 16 different bacterial species were found in this study. Out of 29 urine samples, 24.1% (n=7) samples showed significant growth.

A total of 94 isolated pathogens, more than 22% (n=21) *Coagulase-negative staphylococci*, 17% (n=16) - *Streptococcus pneumoniae*, and 11.7% (n=11) *Staphylococcus aureus* were found. About 23% isolated *Streptococcus pneumoniae* were resistant to penicillin, 15.3% to third generation cephalosporins. From Quinolone/Fluroquinolones groups of antibiotics higher rate of resistant was ciprofloxacin (41.6%). The least effective drug against pneumococci was macrolide group of antibiotics, especially erythromycin – 75%.

Conclusions: Microbiologic monitoring of recipients before living donor kidney transplantation showed a high level prevalence of opportunistic pathogens with a high level of antibiotic resistance as a result of this process of preoperative preparation, it is necessary to carry out sanitation of site bacterial infection.

P9

SINGLE CENTER EXPERIENCE OF THE OUTCOMES OF DONOR OPERATIONS IN LIVING DONOR RENAL TRANSPLANTATION

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Background: Laparoscopic living donor nephrectomy (LLDN) has become the standard procedure for renal transplantation. It is less invasive for donors, requires lower dose of postoperative analgesia. Early activation of these patients prevents many complications. The aim of this study was a retrospective assessment of the safety and outcomes of LLDN on renal transplantations.

Materials and Methods: In our center overall 251 renal transplantation were performed between 2010 and 2016 (2010-1, 2011-9, 2012-35, 2013-55, 2014-64, 2015-84, 2016-3 patients). All cases are living donor renal transplantation. There is no cadaveric organ transplantation program in Azerbaijan. We retrospectively analyzed the data and surgical complications for the 251 patients. Initial 130 operations were open nephrectomy. 115 operations performed by hand assisted laparoscopic approach and 6 nephrectomy by pure laparoscopic.

Results: Hand assisted and pure donor nephrectomies were successfully completed in all patients. The donor mean age was 51.9 ± 7.6 years (range 19 to 75), 28% of the donors were men and all donors mean Body Mass Index was 25.4 ± 2.9 kg/m2. Mean operative time was 124.0 ± 35.0 minutes. Warm ischemic time was 2.5 ± 0.62 minutes. The donor's mean hospital stay was 3.3 (range 2 to 7) and their mean serum creatinine at discharge was 114 μmol/L. After a mean follow-up all donors are alive. There were no major donor complications. One patient presented a wound hematoma responding to conservative treatment. And one case of limforrhea was registered.

Conclusions: LLDN is a safe effective procedure. LLDN was confirmed to be safe and effective, with no negative impact on transplants success.

P10

IS THERE ANY RELATIONSHIP BETWEEN PULMONARY HYPERTENSION AND HEALTH-RELATED QUALITY OF LIFE OF PATIENTS UNDERGOING HEMODIALYSIS

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Background: Pulmonary hypertension (PH) has been reported to occur in a considerable proportion of patients with end stage renal disease (ESRD). ESRD affect health related quality of life (HRQOL) of the patients. There is a lack of specific information on the relationship between PH and HRQOL in patients

with ESRD in the literature. We aimed to evaluate the relationship between PH and HRQOL in patients undergoing hemodialysis (HD).

Materials and Methods: This prospective case-control study included 68 patients treated with HD and 30 healthy subjects for control. Hemodialysis patients with PH were defined as group 1, patients without PH as group 2, and healthy subjects were defined as group 3. Each patient's HRQOL was measured with the Medical Outcomes Study 36-Item Short Form (SF-36) health survey. Doppler echocardiography was performed to determine pulmonary artery pressure (PAP) in all patients. The groups were compared with respect to HRQOL.

Results: PH was found in 47.1% of patients with a mean systolic pulmonary artery pressure 48.9 ± 11.8 mmHg. Significant differences were observed among the three groups regarding the physical function, physical role, bodily pain, general health, vitality, social function, emotional role, mental health and physical component summary ($p=0.00$). There was no significant correlation between PAP and SF-36 scores ($p>0.05$).

Conclusions: PH was a common condition in ESRD patients undergoing HD. Hemodialysis patients had significantly lower QOL scores than healthy subjects. There were no significant differences in terms of SF-36 domains between the hemodialysis patients with and without PH. This may be due to the severe adverse effects of ESRD on HRQOL. We conclude that ESRD has so much adverse effects on HRQOL, therefore the additional effect of PH on HRQOL could not be revealed.

P11

POST-RENAL TRANSPLANT PREGNANCY

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Background: Women with chronic renal failure usually do not ovulate and thus are unable to conceive. As renal function improves following kidney transplantation normal menses and ovulatory cycles resume. The course of pregnancy and delivery in kidney transplant patients is challenging. Immunosuppressive medications are continued during the transplant recipient`s pregnancy to prevent rejection of the kidney. The fetus is also exposed to these medications since they are able to cross the placenta. Most of the newborns have been healthy at birth

Case Report: Mrs. B.K. 25 year old with 6-month history of amenorrhoea was referred after conception following a renal transplantation. It was her first pregnancy. She received right kidney transplantation in 2010. Since then she has been receiving cyclosporine 150mg/day, prednisolone 5mg/day, CellCept (mycophenolate mofetil) 2000 mg/day. Mean baseline blood urea nitrogen level was 5.7mg/dL, serum creatinine level — 0.9mg/dL and total protein level — 6.8g/dL. After pregnancy was diagnosed, CellCept was replaced with azathioprine 50 mg once a day. Sonography was performed monthly. Serum creatinine levels during pregnancy were within the range of 0.8-0.87 mg/dL. She was regularly followed by nephrologist and renal function tests' and urinalyses results were reviewed. Pregnancy course was uncomplicated. Renal parameters and blood pressure were under control. Elective lower segment cesarean section (LSCS) was planned. Baby with birth weight of 2.1 kg was delivered. Postpartum course was uneventful. Mother and baby were discharged on day 7 and were advised to follow with weekly renal function test till 12 weeks which were normal.

Discussion: Although pregnancy in renal transplanted patient is often unproblematic, complications can be serious. The American society of transplantation advised pregnancy planning at any time as long as the graft function is optimal and immunosuppressive medications dosing are stable. The renal graft function is considered adequate when serum creatinine level is lower than 1.5 mg/dl, 24 hours urinary protein excretion is less than 500 mg/dl and there is no evidence of infection. Pregnancy leads to an increase in glomerular filtration rate which causes hyperfiltration. Successful outcome of pregnancy in renal transplant patient depends on pre-pregnancy serum creatinine levels. If pre-pregnancy serum

creatinine levels are lower than 1.4 mg/dl, there is 96% chance of a successful pregnancy. If pre-pregnancy serum creatinine levels are higher than 1.4 mg/dl, rate of successful pregnancy is 70-75% and there is 30% chance of a spontaneous abortion. Care of the patient includes checking for urinary tract infections, treating symptomatic or asymptomatic bacteriuria with penicillins and cephalosporins to avoid renal and fetal complications, control of proteinuria, hypertension, and preeclampsia. Vaginal delivery is recommended for pregnant renal transplant recipients.

Conclusions: Our patient's pregnancy outcome was a live birth. Pregnancy is associated with risk to graft, mother and fetus. Joint urologist, nephrologist, obstetrician and pediatrician efforts would be necessary for planning, continuation of pregnancy and for a favorable outcome. Timing of pregnancy depends on optimal graft function and not on the time elapsed after transplantation.

P12

THE PREVALENCE OF ALBUMINURIA IN PATIENTS REFERRED TO A NEPHROLOGY OUTPATIENT CLINIC

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Background: Acute kidney injury (AKI) and chronic kidney disease (CKD) are conditions that substantially increase morbidity and mortality. Microalbuminuria is an early sign of kidney damage. The prevalence of microalbuminuria in Azerbaijan has not been described before. The aim of this study was to determine the prevalence of micro- and microalbuminuria, as well as increased urine albumin-creatinine ratio (ACR) in patients referred (and self-referred) to a nephrology outpatient clinic (MedServis Private Medical Center).

Materials and Methods: Our study included patients referred (and self-referred) to a nephrology outpatient clinic (MedServis Private Medical Center, Baku, Azerbaijan). Microalbumin test using a single morning urine sample was performed on NycoCard ® Reader II (Axis-Shield, Norway, UK), creatinine test was performed on Vitros instrument (Johnson & Johnson, USA).

Results: During the period of 2015-2016, 86 patients were tested for microalbuminuria and urine albumin-creatinine ratio (men 13%, women 87%, mean age ≥ 30 [33.37 ± 1.5] years). The prevalence of microalbuminuria and increased urine albumin-creatinine ratio among study population were 49% and 49%, respectively. Mean urine microalbumin level was 304,52 ± 73,63 mg/l, mean urine albumin-creatinine ratio was 38,36±8,54 mmol/l.

Conclusions: The prevalence of microalbuminuria in patients ≥30 years old is quite high among the population of the city of Baku. Our results show that quantification of microalbumin in a single morning urine sample can be used for screening and early detection of chronic kidney disease in Azerbaijan.

P13

THE IMPACT OF RETROGRADE REPERFUSION OF DONOR KIDNEY ON THE FUNCTIONAL CAPACITY OF THE KIDNEY TRANSPLANT

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Background: Ischemia-reperfusion injury is one of the most common causes of early graft dysfunction that occurs immediately after reperfusion of the graft. According to liver transplant studies [1] the retrograde reperfusion reduces the risk of ischemic-reperfusion injury, and thus improves the functional ability and viability of the graft. Our objective was

to improve the survival rate of renal transplants by application of retrograde reperfusion approach in kidney transplantation.

Materials and Methods: A total of 184 kidney transplants from living donors were performed at JSC «National Scientific Center of Oncology and Transplantation» for the period from 2010 to 2015. In 58 cases (study group) the method of retrograde reperfusion of the donor kidney was performed. The remaining 126 recipients (control group) had approach with regular anterograde reperfusion of the donor organ.

During the stage of donor kidney implantation the vascular clips from the kidney veins were taken to allow retrograde flow of venous blood after anastomosing the venous vessels of the donor kidney and external/or common iliac vein of the recipient by "end-to-side" anastomosis and before arterial anastomosis of kidney graft and recipient's iliac artery were performed. At the time of arterial anastomosis procedure the graft was being filled with the venous blood and flowed through the donor kidney's artery. The amount of allocated venous blood through the kidney artery was approximately between 10 to 16ml. Reperfusion of the graft with arterial blood had been performed after completion of "end-to-side" anastomosis between kidney artery and iliac arteries. The control group recipients had regular anterograde reperfusion performed.

Results: In a study group after performance of retrograde reperfusion of the kidney graft the urine appearance wasn't delayed, the blood flow in the artery was sufficient and kidney color/turgor changes were absent. In the early postoperative period in 98% of recipients of the main group the urine output (hourly) ranged from 300 to 1200 ml; creatinine and urea decreased 2-3 times from the original levels and became normal at PO days 3-4, in 2% patients on a POD- 6. In the control group 82% of patients had the gradual decrease in creatinine and BUN levels on average of 5 days after transplantation, the remaining 18% of patients at POD 7-8. Another observation was in the control group 14 recipients had a delayed graft function or acute graft rejection.

P14

THE ROLE OF CARDIOVASCULAR TEM'S TRANSCAPILLARY HEMODYNAMICS IN PATIENTS TREATED WITH HEMODIALYSIS

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Background: Ultrafiltration during hemodialysis often leads to arterial blood pressure drop in patients receiving hemodialysis. The primary causes include endothelial dysfunction and the extent of fluid exchange between intracellular and extracellular compartments. Considering the lack of information in available literature on transcapillary hemodynamics during ultrafiltration in patients receiving hemodialysis, we decided to study transcapillary hemodynamics in such patients.

Materials and Methods: To assess transcapillary hemodynamics we used McClure-Aldrich symptom (test). So 0.5 ml 0.9% NaCl (normal saline solution) and 2,0 ml 0.9% NaCl were injected intradermally and subdermally, respectively, into lower third of upper arm and transcapillary hemodynamics was evaluated by the time required for absorption of injected solution during hemodialysis session.

The examination was conducted in Hemodialysis Department of Clinical Medical Center on 68 patients (39 males and 29 females) receiving hemodialysis during the period exceeding 10 years. Patients between 25-60 years received hemodialysis on Fresenius 4008S hemodialysis machine and FX8 dialyzer, 3 sessions a week, 4 hours each. The etiology of chronic kidney disease in 28 of them was diabetes, in 15 patients chronic glomerulonephritis, in 11 patients pyelonephritis, in 6 patients autosomal dominant polycystic kidney disease, in 8 patients kidney stone disease, and in 10 patients arterial hypertension. Diuresis was adequate in 25 patients; ultrafiltration was between 1.0 – 5.0 liters in 43 patients.

Results: Intradermally injected normal saline solution was absorbed in 4.2±5.7 minutes and subdermally injected solution was absorbed in

6.1±3.8 minutes in 15 patients. In 24 patients, intradermally injected normal saline solution was absorbed in 11.9±4.3 minutes and subdermally injected solution was absorbed in 17.3±3.5 minutes. In 29 patients, intradermally injected normal saline solution was absorbed in 19.5±5.2 minutes and subdermally injected solution was absorbed in 2.3±4.8 minutes.

Conclusions: The data show that the absorption of both subdermally and intradermally injected normal saline solution takes considerable amount of time in patients with arterial blood pressure drops during ultrafiltration. On our opinion, prolonged absorption time of normal saline solution in patients with chronic kidney disease caused by diabetes, arterial hypertension and chronic glomerulonephritis results from blood flow retardation in arteriocapillary-venular anastomotic system. This, in turn, causes fluid resorption delay between compartments during ultrafiltration and arterial blood pressure drop.

P15

TRANSPLANT PROGRAM DEVELOPMENT IN KAZAKHSTAN: EXPERIENCE OF 5 YEARS

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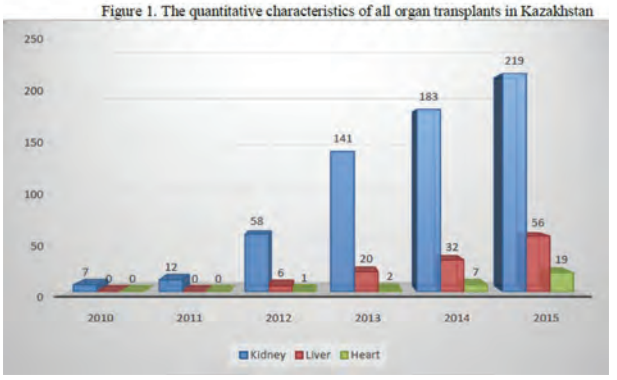
Kazakhstan as the one of the fast developing countries in Central Asia has been improving the development of organ transplantation since 2010. There are 9 national and city level hospitals performing kidney, liver and heart transplantations in two major cities Almaty and Astana. A coordination center for organ transplantation was established in 2013 with the purpose of developing cadaveric donation service in Kazakhstan. In all 16 regions of our country we have transplant coordinators who work on finding potential donors, talking to their relatives, and making organ preservation. Considering the huge territory of the country there is a sanitary aviation service specially prepared for organ transportation, the special team for organ harvesting and for recipients. The aim of this analysis was to present the overall results of transplant service development in Kazakhstan.

Overall, 760 patients had undergone transplantations of kidneys, liver and heart for the last 5 years. The first kidney transplantation from a cadaveric donor performed in 1979, and this date considered as a beginning of the organ transplantation development in the Republic of Kazakhstan (RK). For the first time in our country, the multi-organ harvesting of organs: kidneys and the heart from cadaveric donor was performed in 2012. Our national center became a pioneer in performing liver transplantation from a cadaveric donor since 2013. The same year, the first pediatric liver transplantation from a living donor was carried out for a 6-year-old child. Starting from 2013 in collaboration with transplant surgeons from Turkey and South Korea many hospitals started to develop living donor liver transplant programs. Figure 1 illustrates the quantitative characteristics of organ transplants carried out in the Republic of Kazakhstan for the period from 2003 to 2014.

Our experience of Transplant program development highlights the demands of our population in organ donors with high mortality on a waiting list (72%). Thus, the development of living donor transplantation and overall transplant service will increase survival and quality of life of patients with end stage diseases.

Figure 1. The quantitative characteristics of all organ transplants in Kazakhstan



Poster

P16

HISTOMORPHOLOGY OF PARVOVIRUS B19 INFECTION IN A RENAL TRANPLANT RECIPIENT

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Background: Parvovirus B19 is a DNA virus which commonly affects the general population. The main target of this virus is human erythroid precursor cells. It causes fever, arthralgia, rash and almost invariably anemia. It is also an important cause of anemia in immunocompromised population. Although the exact incidence remains to be detected, it is believed that one in every ten renal transplant recipients is infected by Parvovirus B19. We present a case of unexplained anemia and fever in a renal transplant recipient whose bone marrow biopsy showed typical findings of Parvovirus B19 infection.

Case Report: Forty-two years old male patient had renal allograft transplantation from a cadaver because of type I diabetes mellitus resulting in renal insufficiency. His uneventful follow up of 14 months was complicated by fever and persistent anemia unresponsive to erythropoietin. Diagnostic bone marrow biopsy was performed. The histologic sections of this biopsy showed a mildly hypocellular bone marrow with decreased number of erythroid precursors. Some of the erythroid precursors displayed large, pale intracytoplasmic inclusions with peripheral condensation of nuclear chromatin. The diagnosis of possible Parvovirus B19 infection was made and clinical and serological evaluation was recommended. The patient recovered with symptomatic and supportive care.

Conclusions: Among various infectious agents affecting solid organ transplant patients, Parvovirus B19 should be suspected in cases of unexplained anemia. Although histologic examination of the bone marrow tissue is helpful, serologic evaluation is the cornerstone of the diagnosis and should not be neglected.

P17

POST-TRANSPLANT LYMPHOPROLIFERATIVE DISORDER MANIFESTING AS INTESTINAL EBV POSITIVE ANAPLASTIC LARGE CELL LYMPHOMA IN AN ADULT RENAL TRANSPLANT RECIPIENT

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Background: Post-transplant lymphoproliferative disorder (PTLD) is a relatively common post-transplantation malignancy affecting as frequent as 10% of all solid organ recipients. The risk of developing PTLD is highest within the first year of transplantation and children are more commonly affected. Out of all PTLDs, 85 % are of B cell origin with over 80% of Epstein-Barr virus (EBV) association. T cell PTLDs are much rarer and less frequently associated with EBV. Here we report a case of EBV positive anaplastic large cell lymphoma (ALCL) causing intestinal perforation in an adult renal transplant recipient.

Case report: The patient was a 52-year of male who had renal allograft transplantation 10 years ago from his mother due to familial Mediterranean fever. During the last 8 months he experienced recurrent ascites complicating his recently diagnosed cryptogenic liver failure and he was accepted as a liver transplantation candidate. However, the patient admitted with severe abdominal pain which turned out to result from ileal perforation. The intestinal resection specimen showed diffuse and massive wall thickening on macroscopic evaluation. Microscopically the intestinal wall was diffusely infiltrated with large, pleomorphic, discohesive neoplastic cells which in some areas take the form of giant cells. Immunohistochemically these cells were labeled by CD45, CD2, CD30 and perforin whereas CD20, CD3, CD4, CD 7, CD8, CD56, ALK, granzyme and CD138 displayed negative staining. EBV encoded RNA (EBER) in-

situ hybridization was positive. The diagnosis was monomorphic PTLD manifesting as EBV-positive ALCL. The patient deceased 3 months following the diagnosis.

Conclusions: ALCL is a rare form of T-cell PTLDs, which are infrequently associated with EBV. The occurrence of this uncommon form of PTLD, its late onset, intestinal localization and EBV association represent a unique clinical rarity.

P18

PRE-TRANSPLANT THYROID FINDINGS OF END-STAGE RENAL DISEASE PATIENTS

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Background: Patients with end-stage renal diseases can display abnormal thyroid gland function because of alteration of thyroid hormone levels, and this is primarily accepted due to the effect of uremia and altered hormone excretion and transport. In this study, we aimed to evaluate the incidence of thyroid diseases by fine-needle aspiration cytology (FNA) in kidney transplant candidates and estimate the outcomes of these patients.

Materials and Methods: We re-evaluated thyroid FNA biopsies which is taken between January 2000 and December 2015 of 181 patients whom were candidate for kidney transplantation. Patients' demographics, serum levels of thyroid hormones, thyroid ultrasonography and biopsy findings were recorded.

Results: The FNA biopsy findings of 181 patients were as follows; 162 were benign, 5 were thyroiditis, 9 were atypia of undetermined significance/follicular lesion of undetermined significance (AUS/FLUS), 5 were malignant. Only 13 (7.1%) of 181 patients had underwent thyroid operation after FNA. Of 13 patients whom underwent operation were diagnosed benign in 5 patients, AUS/FLUS in 3 patients and malignant in 5 patients. In 5 patients with benign cytology, the histopathological findings were also found benign. In 3 patients with AUS/FLUS, the final diagnosis was adenomatous hyperplasia. Finally 5 patients with malignant FNA showed papillary thyroid carcinoma (PTC). Among 5 patients with PTC, 4 of them underwent to renal transplantation. The patient survival of these 4 patients with PTC was 92±42 months without tumor recurrence.

Conclusions: FNA is a useful diagnostic modality in the evaluation of thyroid nodules in kidney transplantation candidates. Early detection and management of thyroid nodules are essential to decrease the morbidity and mortality of these patients.

P19

POSTTRANSPLANT HYPERURICEMIA AS A CARDIOVASCULAR RISK FACTOR: CORRELATION BETWEEN CARDIOVASCULAR RISK FACTORS

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Background: Hyperuricemia is common after renal transplantation (RT) and a strong evidence supports its inverse prognostic role in graft function. Patients with chronic kidney disease (CKD) are under high risk of cardiovascular disease (CVD). Chronic inflammation, disturbed calcium-phosphorus-parathyroid hormone axis, increased fibroblast growth factor-23 (FGF-23), increased advanced glycation end-products (AGE) and decreased Klotho gene activity are some of the possible factors that will play a role in progression of kidney disease and cardiovascular disease in renal disease population. In this study we aimed to analyze if there is a relationship between hyperuricemia, AGE, FGF-23 and Klotho activity in a group of RT recipients.

Materials and Methods: A total of 100 patients (28 female, 39.2 ± 11.2 years aged) who underwent RT at least 12 months ago were included in this observational cross-sectional study. Demographic characteristics of patients and mean of creatinine, calcium, phosphorus, parathyroid hormone, CRP and uric acid (UA) levels of the last 3 months were collected from patient charts. A plasma sample was studied for Klotho activity, FGF-23 and AGE levels in each subject. Patients were grouped according to UA levels as hyperuricemic (≥ 6 mg/dL, n: 50) and control (n:50) groups for statistical analysis.

Results: Hyperuricemic patients had higher serum CRP [5.7 (7) vs 4.5 (4), p:0.009], AGE [1.6 (3.5) vs 0.6 (0.9), p:0.0001] and FGF-23 [71.6 (187) vs 43 (36), p: 0.008] levels while they also had lower Klotho [0.5(0.9) vs 1.1 (4.7), p0.0001]activity. Uric acid levels were positively correlated with serum CRP (r:0.237, p:0.018), FGF-23 (r:0.352, p:0.0001) and AGE (r: 0.481, p:0.0001) levels and negatively correlated with Klotho activity (r: -0.364, p:0.0001). Hyperuricemic patients also had lower creatinine clearance (53.8 ± 23.1 vs 80.6 ± 23.7 mL/min). A linear regression analysis revealed that AGE and FGF-23 levels were significant determinants of UA levels (p: 0.0001, 0.012 respectively).

Conclusions: Hyperuricemia is closely related with decreased Klotho activity, increased FGF-23, AGE levels and inflammation in RT recipients. Its prognostic influence may depend on strong association with the cardiovascular risk factors.

P20

AMBULATORY BLOOD PRESSURE MEASUREMENT AS A PROGNOSTIC TOOL IN RENAL TRANSPLANT RECIPIENTS

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Background: Hypertension is both a cause and a consequence of renal dysfunction. Blood pressure control is also important in patients with renal transplantation (RT). Increased blood pressure might accelerate loss of renal function in these patients. In this study we aimed to analyze relationship between blood pressure and graft function in a group of RT recipients.

Materials and Methods: A group of 150 RT recipients with stable renal function (no acute rejection episode or serious medical condition that require hospitalization during follow-up) were included. Each patient was evaluated for blood pressure control with ambulatory blood pressure monitorization (ABPM) at the initiation of study and after laboratory and clinical data were evaluated at 12 month follow-up period. Subjects were grouped at the end of 12 months follow-up according to loss of glomerular filtration rate (IGFR) as ≤ 10 ml/min (group 1, n:77) and lGFR > 10 mL/min (group 2, n:73).

Results: Groups were similar in means of demographic characteristics, medications and initial creatinine and GFR levels. Basal ABPM of study groups were statistically equivalent. Both groups had higher creatinine and lower GFR levels at the end of 12 months compared to their initial values (p: 0.0001). However in group 2 patients who had more than 10 mL/min GFR loss there was a significant increase in both mean systolic (119 vs 143 mmHg, p: 0.001) and diastolic (76 vs 88 mmHg, p: 0.01) blood pressures while there was no significant change in group 1 patients. We also observed that group 2 patients had higher blood pressures compared to group 1 patients (p: 0.01).

Conclusions: As a conclusion, ambulatory blood pressure results are closely related with significant decline in renal function in RT recipients. Therefore it should be included routinely and the patients' blood pressure should be targeted to the normal limits during the follow-up.

P21

ALKALINE PHOSPHATASE A NEW MARKER FOR GRAFT OUTCOME AND HIGH PULSE WAVE VELOCITY IN RENAL TRANSPLANT RECIPIENTS

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Background: Alkaline phosphatase (ALP) is a marker of bone turnover which is widely used for estimating type of bone turnover in patients with end-stage renal disease (ESRD). Recent data has implicated ALP as an initiator of calcification and pointed it to be associated with atherosclerosis. In this study we aimed to analyze the relationship between renal resistive index and pulse wave velocity and ALP values in a group of renal transplantation patients with good renal function.

Materials and Methods: A group of 160 RT recipients (55 years old, 42 female, post transplantation duration median 52 months) were included. Each patient was with a current RT doppler ultrasonography for RRI measurement and pulse wave velocity were recorded. Subjects were grouped according to the post transplant first years' ALP levels as increased ALP (> 120 U/mL, n:42) and normal ALP (n: 118) groups.

Results: Groups were similar in means of demographic characteristics, medications and creatinine, calcium, phosphorus, CaxP and PTH and creatinine clearance levels according to the first years results. Patients with increased ALP levels also had increased RRI (0.71 ± 0.06 vs 0.67 ± 0.08, p: 0.022) and pulse wave velocity measurements (8.6 ± 2.4 vs 6.8 ± 1.3, p: 0.003). A follow-up data of 3 years revealed that patients with increased ALP had higher creatinine (p: 0.03) and lower GFR levels (p: 0.02).

Conclusions: In conclusion, posts transplant high ALP level correlates with atherosclerosis and high renal resistive index. Additionally, ALP can be a new prognostic follow-up marker in terms of atherosclerosis and patients whose levels >120 IU/L show poor long term renal graft function.

P22

THE ROLE OF PROCALCITONIN IN DIFFERENTIAL DIAGNOSIS OF PNEUMONIA AND PULMONARY CONGESTION ASSOCIATED WITH END-STAGE RENAL FAILURE

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Background: In end-stage renal failure (ESRF) patients, a growing frequency of bacterial infection is observed secondary to disrupted cellular and humoral responses. Pneumonia acts as a notable focus of bacterial infections in ESRF cases. Recent studies have focused on laboratory parameters that would support clinical and radiographic diagnosis of pneumonia. Procalcitonin (PCT), is a novel diagnostic parameter that is used by a growing number of physicians in distinguishing bacterial and nonbacterial inflammations. Although kidneys play an important part in PCT elimination, the number of studies on PCT among patients receiving hemodialysis (HD) is markedly low. Despite the fact that our hospital is a reference center where ESRF patients are commonly followed, we face difficulties in distinguishing between pneumonia and non-pneumonia lung problems. In this study, we aim to determine the role of PCT in distinguishing between infectious and noninfectious causes, concerning the

etiology of the infiltrative appearances detected on lung radiographs of ESRF patients receiving HD.

Materials and Methods: Sixty-six cases between 19-87 years of age were enrolled in the study. Those cases were split into 3 groups each of which consisted of 22 patients: Pneumonia patients without ESRF, pulmonary congestion patients with ESRF and healthy control group. On admission, entire demographic and clinical characteristics of the cases were noted; antero-posterior lung radiographs were taken; and blood samples were obtained for CBC, C-reactive protein (CRP) and PCT measurements. In addition, patients in the pulmonary congestion + ESRF group received control postero-anterior lung radiography.

Results: While pneumonia group demonstrated a significantly lower mean PCT value compared with the ESRF + congestion group (p=0.001), mean CRP and leukocyte levels were significantly higher in the pneumonia group (p<0.05). In terms of mean CRP and leukocyte levels, there was no difference between the ESRF + congestion group and the control group (p>0.05). The classification performed by recognizing 0.5 ng/ml as the cut-off point for PCT, displayed no significant difference between the pneumonia and ESRF + congestion groups (p=0.103), whereas a significant difference (p=0.014) was found between the pneumonia and ESRF + congestion groups upon basing the classification on 1.5 ng/ml cut-off point in the ESRF + congestion group and 0.5 ng/ml cut-off point in the pneumonia group. PCT level was below 1.5 ng/ml in all the cases (n=22, 100%) in the ESRF + congestion group.

Conclusions: In conclusion, our findings support that PCT has no superiority over CRP in the diagnosis of pneumonia. Moreover, it was concluded that, as a result of detecting serum PCT values below 1.5 ng/ml in ESRF patients who have pulmonary congestion without clinical signs of infection, infiltrative appearances on lung images may be attributed to hypervolemia, which would in turn prevent unnecessary antibiotic therapies. We believe that CRP measurement is still more preferable than PCT in revealing the inflammatory response due to its cost-effective and easy-to-perform characteristics as well as the high diagnostic performance especially in transplant candidates.

P23

METABOLIC ACIDOSIS AND GRAFT FUNCTION AFTER KIDNEY TRANSPLANTATION

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Background: Metabolic acidosis is a common complication after kidney transplantation. Calcineurin inhibitors (CNI), suboptimal allograft function, donor age and acute rejection have been associated with metabolic acidosis; no detailed study has been conducted to investigate the prevalence and clinical implications of metabolic acidosis in long-term pediatric kidney recipients.

Materials and Methods: In this cross-sectional study, we enrolled 60 patients (M/F: 27/33) for the study. Patients with glomerular filtration rate (GFR) < 30ml/min/1.73m^2, unstable allograft function, diarrhea, and respiratory disease were excluded. Metabolic acidosis was diagnosed on the basis of low plasma bicarbonate (<22 mEq/L), arterial pH (<7.37) and partial carbon dioxide value (<40 mmHg) together. Bone mineral densitometry (BMD) was measured by dual energy x-ray absorptiometry (DXA). Z-scores matched for age, sex, and body mass index. BMD was measured at the lumbar spine in each patient.

Results: The mean age of patients was 15.43±4.76 years and the mean duration of follow-up was 18 months. Sixteen patients (26.7%) were found to have metabolic acidosis on the basis of plasma bicarbonate and arterial pH measurements. GFR was found to be lower in patients with metabolic acidosis (66.31±28.09 in metabolic acidosis and 88.28±33.39 ml/min/1.73m^2 in non-metabolic acidosis, p=0.02). Acidosis due to unstable allograft function occurred when the GFR decreases below 60ml/min/1.73 m^2. GFR value of the 15 patients with metabolic acidosis was under 60 ml/min/1.73m^2. Uric acid and creatinine levels were found to be higher in metabolic acidosis group (uric acid: 5.95±1.23 mg/dl vs. 4.92±1.69 mg/dl, p=0.03, creatinine: 1.40±0.76 mg/dl vs. 0.90±0.36 mg/dl, p=0.001), while no difference was

noticed in body mass index, CRP or serum albumin. Parathyroid hormone levels were also found to be significantly higher in patients with metabolic acidosis, revealed no difference in frequency of osteoporosis (42% vs. 52%) or osteopenia (31.6% vs. 36%). We also did not find any relation between metabolic acidosis and immunosuppressive regimen or trough levels of CNI.

Conclusions: Kidney recipients have a relatively high prevalence of metabolic acidosis. Etiology of acidosis after transplant can change due to GFR level. Further studies are needed for evaluate long-term effects of metabolic acidosis in kidney recipients

P24

TIMING FOR REMOVAL OF PERITONEAL DIALYSIS CATHETERS IN POSTTRANSPLANT PATIENTS

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Background: Peritoneal dialysis (PD), the preferred long-term renal replacement modality in the pediatric population, can also be used during the post-transplant period. Although it is well known that peritonitis or other complications may occur related to the PD catheter, less is known about complications related to the PD during the post-transplant period. Our objective was to evaluate the complications related to use of a PD catheter during the post-transplant period and to determine the optimum time for removal of the PD catheter.

Materials and Methods: We retrospectively analyzed 33 chronic PD patients. Pretransplant and posttransplant demographics and clinical and laboratory data for each patient were recorded including the incidence of peritonitis and the incidence of PD catheter requirement after transplantation.

Results: Mean age of patients at transplantation was 12.8±4.0 (range: 3.5-18.0) years. Mean catheter removal time (CRT) was 81.1±36.2 (range: 22.0-152.0) days. PD catheter was used in 6 cases (6/33-18.2%), none of these patients developed peritonitis. In contrast, two of the 27 patients who didn't use the PD catheter developed peritonitis. Our data suggest that the need for catheter use occurs predominantly during the first month, while infectious complications usually happen later.

Conclusions: Although in previous years, the trend was to not remove the PD catheter at the time of transplantation, in light of recent literature and our study described herein, we recommend that the time of catheter removal should be modified and decided for each patient on an individual basis.

P25

ASSOCIATION BETWEEN VITAMIN D LEVEL AND ANEMIA IN PEDIATRIC RENAL TRANSPLANT PATIENTS

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Background: Vitamin D metabolism is dysregulated during chronic renal failure. Successful renal transplantation normalizes hematological, metabolic and endocrine abnormalities. Most tissues have a vitamin D receptor and it play an essential role in the regulation of body functions. It has been suggested that vitamin D have an effect on erthyropoesis. We aimed to evaluate vitamin D status and the association between vitamin D and anemia after renal transplant in children.

Materials and Methods: Seventy-five renal transplanted children were enrolled to the study. Anemia was defined as hemoglobin level less

than 11 g/dl. 25(OH)-D values of <20 and <30 ng/mL defined that deficiency and insufficiency, respectively. Patients were grouped 25(OH)-D level is below 20 ng/ml, between 20-30 ng/ml, above 30 ng/ml (group 1, 2, 3; respectively) according to their 25(OH)-D level in the first year

Results: The mean age at transplantation was 12.91±4.66 years. Mean follow-up period after transplantation was 5.33±3.74 years. 41 patients (%54.7) had vitamin D deficiency (group 1), 24 patients (%32) had vitamin D insufficiency (group 2) and 10 patients (%13) had normal range vitamin D level (group 3). 18 patients (24%) had anemia. Only one patient (5.5%) has normal range vitamin D level among patients diagnosed with anemia, and 6 patients (10.5%) had normal range vitamin D level in patients without anemia. Although we cannot be demonstrated a significant difference between for this relation, patients with anemia had lower vitamin D level. We determined a negative correlation between ferritin and vitamin D level in patients diagnosed with anemia (r=-0.6, p=0.013). Patients with vitamin D deficiency had significantly lower hematocrit level when compared with other groups. However, other parameters of anemia such as hemoglobin, MCV, the number of erythrocytes, serum ferritin level and transferrin saturation were similar for all groups. Any significant difference could be demonstrated between patients with and without anemia for parathyroid hormone level and glomerular filtration rate.

Conclusions: Vitamin D deficiency was common in pediatric renal transplant patients. Vitamin D deficiency is associated with increased risk of anemia in renal transplanted children. Further studies are needed to determine whether vitamin D status and its effects on anemia in pediatric transplant patients.

P26

COLON BIOPSY FINDINGS OF PATIENTS WITH RENAL TRANSPLANTATION

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Background: Gastrointestinal complications after renal transplantation can present a major post-operative problem. Awareness of recognition of colonic complications and findings is very helpful to increase the patient survival. The purpose of this study was to evaluate colonic pathologies in renal transplant recipients.

Materials and Methods: Patients with colon biopsies were selected from 1816 renal transplant recipients from January 1990 to December 2012 at Baskent University Hospital in Ankara, Turkey. Demographic and clinical findings including age, sex, primary renal disease, immunosuppressive therapy and the time between transplant and colon biopsy were examined.

Results: There were 84 patients who had colon biopsy after renal transplantation. There were 57 male and 27 female patients (median age at renal transplant, 33y; range 13 to 63 y). Chronic diarrhea was the most common clinical finding at the time of colon biopsy. The median interval from renal transplantation to first colon biopsy was 48.1±47.5 months. Nineteen of these patients had second, five of them had third and three of them had their fourth colon biopsy.

On microscopic evaluation, there were no pathologic changes in 17 patients. Remaining 67 patients had colitis (n=38), polyps (n=17), CMV colitis (n=8) and, amyloidosis (n=4). The mean interval between transplantation and the diagnosis of colitis was 49.08 ± 42.6, amyloidosis was 47.5 ± 79.28, CMV colitis was 5 ± 3.5 and polyps were 77.65 ± 58.8 months. There is a statistically significant difference between diagnosis groups in regards of the time interval

between transplantation and the biopsy diagnosis (p<0,01). Among 84 renal transplant recipients with colonic biopsies, 40 patients never had acute rejection episodes and 44 patients had at least 1 acute rejection episode. Total 7 of 8 patients had CMV colitis, 19 of 38 had colitis, 3 of 4 had amyloidosis and 5 of 17 had polyps had acute rejection episodes.

Conclusions: We presented the colonic manifestations in renal transplantation recipients. The most common colonic lesion was found to be non-infectious colitis. CMV colitis is an important infection that affects immunosuppressed individuals such as transplant recipients. CMV must be kept in mind and thorough sectioning and immunohistochemical staining should be used if necessary in the presence of any clinical or histological suspicion for infective colitis.

P27

THE RISK AND PROGNOSTIC FACTORS OF C4D-POSITIVE ACUTE HUMORAL RENAL ALLOGRAFT REJECTION

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Background: The risk of graft loss has typically been high in recipients with acute humoral rejection (AHR) with 1-year graft survival rates varying between 15 to 50%. The aim of this study was to determine the incidence and clinical characteristics of C4d+ AHR in renal allografts and to further determine the prognostic factors which impact on graft survival.

Materials and Methods: Between 2005 and 2015, total 814 kidney transplantation (Tx) were performed in 529 males and 285 females. All donors and recipients were ABO compatible. Among them, 89 (10.9%) patients had at least one episode of biopsy-proven C4d+ AHR. Of 814 patients the risk of development of C4d+ AHR was found 12.7% (67/529) and 7.7% (22/285) for male and female patients respectively.

Results: The mean biopsy number and the mean biopsy number that had C4d+ AHR were 2.5±1.4 and 1.78±0.9 respectively. In addition 44 patients (49.4%) had acute cellular rejection (ACR) at the same time with AHR episode. The mean time of the development of AHR was found 4.5±9.2 months. Development of C4d+ AHR in 1st week, 1st, 3rd and 6th month after Tx were found 27%, 58.4%, 70.8% and 82% respectively. One year after Tx, 73 patients had good graft function, 11 patients (12.4%) had developed chronic humoral rejection (CHR) and only 5 patients (5.6%) had lost their graft. The risk of the development of CHR (p<0.001) and the graft loss (p<0.05) in the 1st year after Tx were significantly higher in patients with mixed AHR+ACR compared to patients with only AHR. The overall 1-year graft survival was 100% and 88% for cases with pure AHR and cases with mixed AHR+ACR respectively (p<0.05). In addition the risk CHR and graft loss were found to be increased with increasing number of AHR episodes (p<0.05). It was noted that the number of AHR episodes and the presence of ACR were found to be increased with increasing recipient and donor age (p<0.05 for all).The risk of the development of AHR in the 1st, 3rd and 12th months was higher in patients with age over 40 years old and in cases with donor age over 50 years old (p<0.01 for all). None of aged matched patients lost their graft. While all graft losses was found in non-aged matched group. Nine of 11 CHR cases (81.8%) were from non-aged matched group (p=0.01). Development of CHR and graft loss was increased in patients whom had AHR in first 3rd, 6th and 12th months compared to patients whom did not have AHR in these periods (p<0.05 for all).

Conclusions: This study outlines the histological profiles of AHR patients with poor graft prognosis. Recipients aged over 40 years, donors aged over 50 years, first AHR episodes in 1st, 3rd, and 6th months and patients with mixed AHR+ACR had worse graft prognosis.

P28

PRELIMINARY HISTOPATHOLOGICAL STUDY OF RECIPIENT AND DONOR ARTERY BIOPSIES BEFORE RENAL TRANSPLANTATION

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Background: Pathologic changes in renal arteries of donor and recipient kidneys may affect graft survival and recipient prognosis. The purpose of this study was to investigate the incidence of renal arterial histopathological changes in renal transplant patients.

Materials and Methods: We retrospectively examined 33 patients who had renal transplant at Başkent University from September 2014 to January 2016. The files of these patients were reviewed for demographic and clinical information including the presence of hypertension and diabetes. A total of 66 renal arterial biopsies for 33 patients, being one from the donor and one from the recipient were histologically examined for intimal thickening, mucoid degeneration and calcification.

Results: Our study included 18 male (54.5%) and 15 female (45.5%) renal transplant recipients. The mean age of recipients was 44.5 (14-69) years and the mean age of donors was 50.2 (30-75) years. Three recipients had (%9.1) diabetes mellitus and 23 (69.7%) had hypertension. Four patients developed post-transplant acute cellular rejection (12.1%). Post-transplant early mortality rate was %3 (n=1). The arterial biopsies from these patients and their donors were evaluated for intimal thickening, mucoid degeneration and calcification. Among 33 recipient artery biopsies, 13 (%39.3) showed intimal thickening, 11 (84.6%) of which to a mild and 2 (15,3%) to a moderate degree. Mucoid degeneration was observed in 23 biopsies (69.6%) and 1 biopsy (9%) established calcification. Intimal thickening was observed in 4 (12.2%) of 33 donor arterial biopsies, 3 (75%) being mild and 1 (25%) being moderate. Mucoid degeneration was observed in 6 biopsies (18.2%). Calcification was not observed in the donor group. The mean age of donors with intimal thickening in arterial biopsies (64.2±8.2 years) was significantly higher than the mean age of donors without arterial intimal thickening (48.3±12.2 years) (p<0.05). Similarly the mean age of donors with mucoid degeneration in arterial biopsies (61.0±15.0 years) was significantly higher than the mean age of donors without arterial mucoid degeneration (47.8±11.0 years) (p<0.05). However these findings were not correlated with the age of recipients.

Conclusions: Arterial biopsies may provide clues for graft survival in renal transplant recipients. In this preliminary study we investigated the histological parameters of perioperative recipient and donor arterial biopsies in renal transplant. Donor age is an important determinant of arterial pathology and therefore may impinge on the prognosis of the recipient.

P29

COMPARISON OF LIGHT AND ELECTRON MICROSCOPE RENAL BIOPSY FINDINGS WITH PROTEINURIA LEVELS OF CANDIDATE LIVING KIDNEY DONORS

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Background: Availability of cadaveric donors is limited and living donor transplantation (Tx) became the most important choice for having allograft. Donors with proteinuria were not accepted as donor in some centers or contrary some donors with proteinuria were accepted as donor without evaluating donor renal biopsy. Our aim is twofold; first to evaluate whether there is a correlation between proteinuria level with the light (LM) and

electron microscopic (EM) findings of donor renal biopsy, second to correlate all these findings with graft survival of patients whom had taken renal allografts from these donors.

Materials and Methods: Renal biopsies of 70 candidate donor whom had proteinuria were included in to study. LM and EM findings were scored. LM scoring was based on the presence and severity of glomerular sclerosis (GS), glomerular basement membrane (GBM) thickness, mesangial thickness (MT), interstitial inflammation, interstitial fibrosis (IF), glomerular magnitude (GM) and glomerular proliferation (GP). EM scoring was based on the presence and severity of glomerular subendothelial widening (SW), endothelial swelling (ES), foot process effacement (FPE), GBM thickness and lamellation. Donors with insignificant biopsy findings were separated into 2 groups according to proteinuria level. Group 1 donors had proteinuria lower than 300 mg/day and group 2 donors had proteinuria equal to or higher than 300 mg/day. Renal allograft survival was recorded from the files of patients whom had kidney Tx from these donors with insignificant biopsy findings.

Results: Among 70 cases with proteinuria, biopsy findings attributed to glomerulonephritis (GN) in 35 (50%) and tubulointerstitial nephritis (TIN) in 2 donors (2.8%). Remaining 33 donors had insignificant biopsy findings. Proteinuria was found 304±105 mg/day in donors with insignificant biopsy and it was found 557±363 mg/day in donors with GN and TIN ($p<0.001$). All LM and EM findings of 33 donor biopsies showed a statistically significant relationship with the level of proteinuria. The incidence of GBM thickness, MT, interstitial inflammation, IF, GP and wide GM in LM evaluation were found higher in group 2 donors compared to group 1. Also the incidence of SW, ES, FPE, GBM thickness and lamellation in EM evaluation were found higher in group 2 donors than group 1 ($p<0.005$ for all). LM and EM scores were 2±1.3 and 1.9±1.3 in group 1 respectively and they were 6±2.3 and 5±1.8 in group 2 respectively ($p<0.001$ for both). Among 33 donors, 21 donors had chance to give their kidney to their relatives (Tx group). Remaining 12 donors were taken out of donor list because of their biopsy and/or clinical findings (Non-Tx group). Proteinuria level, LM score and EM score were higher in non-Tx group than Tx-group ($p<0.01$). Overall 1-, 3-, and 5-year graft survival rates were 90%, 80% and 80% respectively. During 5 years only 5 grafts lost and remaining 16 grafts were functioning well.

Conclusions: Although donors had proteinuria, kidneys with low LM and EM scores were appropriate for donation. Nevertheless we showed that proteinuria greater than 300 mg is a reliable marker of glomerular pathology and renal disease. Thus we must be cautious about donors with proteinuria greater than 300 mg and we recommend taking renal biopsy in every donor whom had proteinuria.

P30

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

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Background: According to the Congress of the European Respiratory Society (ERS 2013) and G. Riffard iM. Toussaint (2012) intrapulmonary percussive 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 intrapulmonalnoy 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 CMVpnevmonii 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);
4- 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 intrapulmonalnoy percussive 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.

P31

RENAL ALLOGRAFT WITH CALCIUM OXALATE DEPOSITION: ITS ASSOCIATION WITH URINARY TRACT INFECTION AND DEVELOPMENT OF INTERSTITIAL FIBROSIS

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Background: The interaction between calcium oxalate (CaOx) deposition and urinary tract infection (UTI) is not well established. The aim of this study was two fold; first to identify the association between CaOx deposition and UTI and second to determine the role of CaOx deposition on the development of interstitial fibrosis (IF).

Materials and Methods: Renal allograft biopsies of 967 patients who were transplanted between 1990 and 2010 were reviewed to identify those with CaOx deposition. Medical files of patients reviewed and all follow-up and indication biopsies of patients were evaluated for the degree of CaOx deposition and for the development of IF.

Results: Among 962 patients, only 27 (2.8%) patients had CaOx deposits in their biopsies. Of 27 patients 7 had primary oxalosis (PO) and 20 had secondary oxalosis (SO). The time of CaOx deposition in allograft was found 1.1 ±0.37 months and 43.9±31 months in patients with PO and SO

respectively. Significant difference was found between two groups (p<0.01). Among 27 patients 7 had tubulointerstitial nephritis (TIN) (25.9%), 4 had only UTI (14.8%) and 2 had both TIN and UTI (7.4%) at the time of CaOx deposition. The cause of TIN was secondary to bacterial infection in 4 cases and secondary to viral infection in 5 cases (Adenovirus: 2, CMV:1, Polyoma virus: 2*). E. Coli* was identified in all cases with UTI. Patients with UTI showed increased CaOx depositions in their follow-up biopsies. The time of the development of IF after CaOx deposition in allograft was 3.5±4.3 months and 10.2±4.2 months in patients with PO and SO respectively (p=0.01). Graft loss after CaOx deposition was 9.2±9.8 months in cases with PO and it was 21.8±12.2 months in cases with SO (p<0.05). Among PO patients, 1-, 2- and 5-year kidney graft survival was 43%, 28% and 0%. Whereas 1-, 2- and 5-year kidney graft survival was 100%, 100% and 67% in SO patients.

Conclusions: We suggested that the presence of CaOx deposits increases the risk UTI and TIN. We also suggested that when both CaOx deposits and E.coli were present, CaOx deposition has tendency to increase in allograft. In addition we also showed that CaOx deposition had a great influence on the development of IF and therefore negative impact on graft survival.

Poster

P32

ASSOCIATION BETWEEN PRE-OPERATIVE PULMONARY RISK SCORES AND POST-OPERATIVE COMPLICATIONS IN RENAL TRANSPLANT RECIPIENTS

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Background: Patients who are being considered for renal transplantation must undergo thorough pre-operative pulmonary evaluation to determine risk of post-operative pulmonary complications (POPC). The aim of this study was to determine relationship between pre-operative pulmonary risk factors score (preOPRS) and pulmonary complications among patients undergoing renal transplantation.

Materials and Methods: Medical records of patients who underwent renal transplantation at our institution between 2004 and 2015 were retrospectively reviewed. Data on patients' demographics, smoking history, comorbidities, preOPRS: age, oxygen saturation, hemoglobin level, type of incision, duration of the surgery, history of lower respiratory tract infection in a month before the surgery, urgency of surgery and the type of pulmonary complications within one month following the transplantation were recorded.

Results: One hundred and thirty one patients (M/F:94/37; mean age: 38.25±12.96) were included in the study. A total of 21(16%) patients developed complication during the first month following the surgery. Ten of the 21 (7.6% overall) patients developed pulmonary complication during the period. These complications were pleural effusion (n:2), pneumonia (n:3), respiratory inefficiency (n:2) and pulmonary embolism (n:1). There were no deaths directly attributed to the pulmonary complications. A significant correlation was observed between the preOPRS and the POPC in renal transplant recipients (p=0,003). A positive correlation between the pre-operative pulmonary scores and post-operative pulmonary complications existed among life-long non-smokers (rho=0.371, p=0.003).

Conclusions: Renal transplantation is an established modality in the management of chronic renal failure. Prevention of pulmonary complications is essential for successful outcome following the transplantation. Health care professionals involved with renal transplantation as well as the transplant centers should be aware of preOPCS. Measures should be observed to reduce these risk factors prior to the planned surgery. Moreover, we also suggest that, smoking history should be considered as a pre-operative pulmonary risk factor as it was found to be a confounder in leading to post-operative pulmonary complications in our study.

P33

SMOKING IS RELATED WITH POSTOPERATIVE PULMONARY COMPLICATIONS AND GRAFT OUTCOMES IN RENAL TRANSPLANTATION PATIENTS

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Background: Renal transplantation (RT) is an important treatment of choice for end-stage renal disease (ESRD). A successful kidney transplant improves the quality of life and reduces the mortality risk when compared with maintenance dialysis in ESRD patients. Several immunological and non immunological factors are responsible for graft outcomes in RT patients. Our study was performed to evaluate the role of smoking on postoperative pulmonary complications (POPCs) and graft outcomes in renal transplantation patients.

Materıals and Methods: Data from 1740 patients who performed renal transplantation between 1987 and 2014 at Baskent University were analyzed retrospectively. The patients with smoking data were included in the study. Patient's demographic, smoking status, comorbid diseases, postoperative pulmonary complications (atelectasis, pleural effusion, pneumonia, respiratory failure, prolonged extubation and pulmonary embolism), graft outcomes and clinical features were all recorded. The relation between postoperative pulmonary complications and risk factors were investigated.

Results: A total of 131 (37 women and 94 men; mean age 38.25 ± 12.96 years) adult renal transplant (19 cadaveric and 112 living donor) recipients included in the study. The incidence of postoperative pulmonary complications were 16% (n = 21) in the first month after surgery. Most postoperative pulmonary complications were minor complications including atelectasis (n= 9), pleural effusion (n=4), pneumonia (n=3), respiratory failure (n=2) respectively. Pulmonary embolism was occured in 1 patient as a major complication. Smoking history was found in fifty-two of the patients (52/131 and 39.7%). Twenty-nine of the patients were exsmoker and twenty-three were current smoker at the time of transplantation surgery. There was a statistically significant relationship between the presence of atelectasis and smoking history (p=0,004). A positive and statistically significant correlation was detected between atelectasis and pack years smoking (r=0.424 ve p=0). There was a statistically significant difference between smoking history and graft rejection (p=0.035). No correlation was found between smoking pack years and graft rejection (p>0.05).

Conclusions: Smoker renal transplantation patients have an increased risk for early postoperative pulmonary complications. Furthermore, cigarette smoking contributes to allograft loss in renal transplantation patients. Smoking cessation prior to surgery can reduce the risk of early postoperative complications.

P34

THE EFFECT OF SMOKING ON PERIPHERAL BLOOD LYMPHOCYTE SUBSETS OF PATIENTS CHRONIC RENAL FAILURE

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Background: We have proof that smoking suppresses the immune system. It is known that chronic renal failure also affects the immune system. However number of researches investigating the effect of both chronic renal failure and smoking are limited. In our study, we planned to investigate whether smoking affects the diminished response of immune system in patients having chronic renal failure.

Materials and Methods: In this study we compared peripheric blood lymphocyte subsets in smoking patients to non smoking ones all having chronic renal failure. We also aimed to perform Fagerström Test for Nicotine Dependence and evaluate its correlation with lymphocyte subsets count among patients who are current smokers. There were 126 patients followed for chronic renal failure in our study. According to their smoking habits, patients were divided into 2 groups: smokers and non-smokers. Average age of 53 smoking patients was calculated as 53.2±1.5 years, while 73 non-smoking patients had an average of 59.2±2.2 years. The mean duration of smoking in smoker group was 30.7±2.7 pack-years.

Results: We found that the percentage of CD16-56 (NK cells) and % lymphocyte was significantly low among smoking group in our study ($p<0.05$). We compared lymphocyte subset panel to pack-year among 126 participating patients and found that the rate of CD16-56 decreases as the smoking duration extends.

Conclusions: Consequently, our study revealed that smoking suppresses immune system measured by lymphocyte subsets in patients with chronic renal failure. According to our findings patients having chronic renal failure should be questioned for smoking, where infection is the most important reason of mortality and morbidity. Particularly in transplant candidates, smoking addiction should be treated preoperatively because of its immunosuppressive effect.

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SMOKING BEHAVIORS OF RENAL TRANSPLANT RECIPIENTS: AN ANALYSIS OF 113 PATIENTS

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Background: Smoking is the most important remediable risk factor for the progression of renal diseases. Smoking has serious adverse effects such as cardiovascular disease, kidney function impairment and cancer on kidney transplant recipients who are already at high risk for these diseases. The objective of this study was to evaluate descriptive characteristics and smoking status of renal transplant recipients.

Materials and Methods: We evaluated a total of 113 patients who underwent renal transplant in Baskent University Hospital between 1990 and 2015. The medical records of all patients were retrospectively reviewed. Patients' demographics, etiology of renal diseases, mortality status, smoking status and the amount of smoking were all recorded.

Results: In our study **e**ighty two (72.7%) of the patients were male and thirty one were female. The mean age was 38.50±12.94 years. The etiology of renal failure were 15.9% hypertension, 12.4% diabetes mellitus, 8% glomerulonephritis, 8% vesicoureteral reflux, 6.2% polycystic kidney disease, 17.6% others and 31.9% unknown in our patients. Comorbid systemic disease was found in 57.6% of the patients. Fifty (44,2%) of the patients were current smoker while sixty three (55,8%) were nonsmoker.

In our study smokers' mean age was 44.68±10.60 years and most of them were male (92.0%). There was a statistically significant difference between smoking status and sex ($p<0.001$). The presence of comorbid diseases was significantly different between smoker and nonsmoker patients ($p=0.001$). The smoking status of patients with hypertension

(28.2%) was significantly different (p=0.032) then others.

Conclusions: Smoking cessation is associated with substantial health benefits for all smokers. Cigarette smoking has also many adverse effects on kidney transplant recipients, causing cardiovascular disease and other comorbid diseaes. Therefore, every attempt should be made to encourage kidney transplant candidates to stop smoking.

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DE NOVO MALIGNANT NEOPLASMS IN RENAL TRANSPLANT PATIENTS

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Background: Malignancy is a known complication among transplant (Tx) recipients, and is likely to become even more common in these patients. Malignancy is the 3rd most common cause of death in renal Tx recipients after cardiovascular events and infections. There is a substantial 3 to 5 fold increase in the incidence of malignancy after solid organ Tx as compared to the general population. Moreover the cancer incidence is also higher in Tx recipients than that seen in dialysis patients.

Materials and Methods: We retrospectively reviewed 867 patients who had kidney Tx at Başkent University. Patients with neoplasms prior to the transplant are excluded. A follow-up study was carried out in order to estimate cancer incidence after transplantation. For each patient, information included donor and recipient characteristics, patients and graft survival and cancer incidence after transplantation. Incident cancer is considered as new cases of cancer after the transplant with pathological confirmation.

Results: Among 867 patients 63 neoplasms were diagnosed in 59 patients (6.8%). The 59 patients were followed for an average period of 112.9±34.4 months after Tx. The mean age at Tx were 36.4 ±12.7 years. Post transplant malignant tumors developed in 41 males and 18 females. Among 59 patients 22 (37.3%) had skin tumors, 19 (32.2%) had solid tumors, 10 (16.9%) had PTLD and 8 (13.6%) had Kaposi's sarcoma. The mean age of patients at the time malignant tumor was 42.7±13.6 years. Statistically significant differences was found between tumor groups in regards of the age at the time of malignant tumor ($p<0.01$). The average latency period between Tx and diagnosis of malignant tumors was 99.8±56.9 months for solid tumors, 78.4±52 month for skin tumors, 64.5±48.8 months for PTLD and 13.5±8.8 months for Kaposi's sarcoma. A significant difference was found between tumor groups in regards of the time between Tx and tumor diagnosis ($p<0.01$). Ten patients (16.9%) had more than one malignant tumor and 49 patients (83.1%) had only one malignant tumor. Of 59 patients 18 were died at a mean time of 31.5±22.8 months after tumor diagnosis. A significant positive association was found between the survival and the number of tumors ($p=0.001$). Overall 5-year survival after the diagnosis of tumor was 81% and 40% for patients with one malignant tumor and patients with more than one malignant tumor respectively.

Conclusions: Malignancy is a common cause of death after renal Tx. Early detection and treatment of post-Tx malignancies is an important challenge. Screening these patients for malignancies post-Tx is crucial. Furthermore, efforts should be directed to define effective immunosuppressive protocols that are associated with a lower incidence of malignancy.

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PRETRANSPLANT COLONOSCOPIC BIOPSY FINDINGS OF END STAGE RENAL DISEASE PATIENTS

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Background: Chronic dialysis imposes several morbidities on patients with renal failure. Lower gastrointestinal system complications are one of these morbidities. The present study aims to determine the extent of pretransplant colonic biopsies from end stage renal disease (ESRD) patients, focusing on the development of adenomatous polyps and colorectal carcinoma.

Materials and Methods: The files of a total of 531 ESRD patients being followed in Başkent University Faculty of Medicine were reviewed for colonoscopic biopsies. These patients were evaluated for age, sex, duration of dialysis at the time of biopsy, histologic diagnoses, hemoglobin levels and certain histologic parameters.

Results: Fifty-three of 531 ESRD patients (10%) underwent colonoscopy during their follow up. Of these 53 patients, 33 (62.3%) were males and 20 (37.7%) were females. The mean age was 56.6 years with a minimum of 20 and a maximum of 84. There were 20 cases of adenomatous polyp (37.7%), 4 cases of invasive adenocarcinoma (7.5%) and 3 cases of amyloidosis (5.7%). The remaining 26 cases displayed inflammatory changes ranging between nonspecific mild inflammation and extensive ulceration. The occurrence of adenomatous polyps and invasive carcinoma did not differ between male and female genders. However the diagnoses of adenomatous polyps and invasive carcinoma were significantly higher in ESRD patients over 50 years of age. The duration of dialysis at the time of biopsy did not seem to influence the development of adenomatous or carcinomatous growth as well.

Conclusions: Lower gastrointestinal system morbidity may influence ESRD patients. ESRD patients over 50 years of age should be closely monitored for adenoma and carcinoma development especially before transplant in order to decline the incidence of development of carcinoma by the influence of immunosuppressive treatment

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FIRST LIVING DONOR LIVER TRANSPLANTATION FOR CONGENITAL HEPATIC FIBROSIS IN AZERBAIJAN

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Background: Congenital hepatic fibrosis (CHF) is an unusual condition in which portal hypertension (PH) occurs without significant hepatic or renal functional impairment and characterized histologically by defective remodeling of the ductal plate. Herein we report a case of living donor liver transplantation for patient with CHF.

Case Report: An 21-year-old man was admitted with slowly progressive distension of abdomen and fullness in upper abdomen of 7 months duration, and history of 3 time hematemesis during last 7 months and 3 times of EVL. The man weighed 62.7kg, with a height of 167 cm. Body mass index was 22.5. General examination revealed pallor and conjunctival xerosis without any signs of liver cell failure or icterus. On abdominal examination spleen measured 9 cm below costal margin with tip below umbilicus without signs of hypersplenism, liver span was 6 cm with no evidence of free fluid in the abdomen. On investigations, hemoglobin was 10.5 g/dl, total leukocyte count was 3060/mm3, platelet count was 106000/mm3, and peripheral blood smear revealed thrombocytopenia, leukopenia, normal erythrocytes and no malarial parasite (MP). Liver function tests revealed total bilirubin of 1.1 mg/dl and serum aspartate transaminase was 9.6 IU/ L, serum alanine transaminase was 10.5 IU/L and alkaline phosphatase was 75 IU/L. Upper GI endoscopy revealed grade III esophageal varices. Prothrombin time and INR were also within normal limits. Abdominal contrast CT

shows the signs of chronic liver decease without any mass and splenomegaly and many portocaval shunts especially around spleen. Liver biopsy showed liver tissue with distorted architecture composed of nodules of different sizes surrounded by fibrous septa. On fibrous septa dilated bile ducts and marked cholangiolar proliferation was seen. Inflammatory infiltration is minimally on fibrous septa. There was focal mild dilatation of interlobular ducts (Fig. 1). These histological features confirmed the diagnosis of CHF and possibility of inactive cirrhosis. Patient was treated by living donor liver transplantation. Procedure was performed without any deviations from standard technique.

Discussion: Classically CHF affected patients are asymptomatic until the age of 5 or 7 years when manifestations of PH or cholangitis lead to the diagnosis. Several clinical forms are described which depend on the variable predominance of PH and cholangitis. Our patient had presented with PH, with no clinical or histological evidence of cholangitis and renal abnormalities. The usual presentation of CHF is with abdominal distension, hematemesis or melena, failure to thrive, jaundice, anemia, hepatomegaly and splenomegaly. The diagnosis is based on liver functions which are well preserved, features of hypersplenism, elevation in levels of alkaline phosphatase and gamma glutamyl transferase . Hallmark of diagnosis is liver biopsy. The management and prognosis of CHF is dependent on alimentary bleeding secondary to PH. However, prognosis may be greatly improved by shunt surgery but survival in some patients may be limited by degree of renal failure. In our case choice of treatment was successful living donor liver transplantation.

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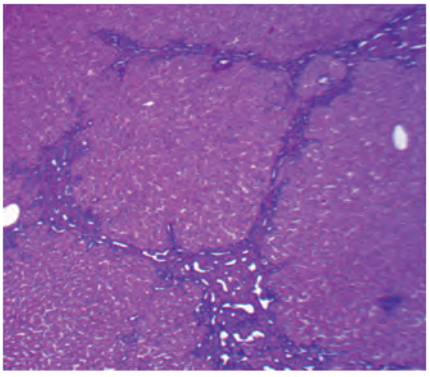
Figure 1. Histological examination: Liver tissue with distorted architecture composed of nodules of different sizes surrounded by fibrous septa.



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MICROBIOLOGIC INVESTIGATION OF PATIENTS BEFORE LIVING DONOR LIVER TRANSPLANTATION

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Background: Chronic infections can cause serious complications and create morbidity and mortality for affected patients during immunosuppressive therapy in the post-transplant period. We aimed to study microbiologic screening results of patients before living donor liver transplantation.

Materials and Methods: The microbiologic screening results of 25 patients during 2015 at National Scientific Research Center in Astana (Kazakhstan) before living donor liver transplantation were prospectively analyzed. Sputum samples, swabs from throat and nose, urine samples

Poster

from these patients were collected for quantitative microbiologic examination. Identification of isolates and antibiotic susceptibility testing were performed using the Vitek 2 automated system (BioMérieux, France).

Results: Of the patients, 16 (64%) were female and average age was 46.8±2.2 years. Out of 97 clinical samples of these patients, 80 samples (82.4%) had showed growth of bacteria. A total of 88 isolates to 15 different species were isolated. The most number of bacteria were isolated from throat swabs (35.2%). Out of 88 isolates, 70 isolates (79.5%) were gram positive, α-hemolysis streptococci was the major isolates (39.7%). *Coagulase-negative staphylococci* were found from 13.6% isolates, *Staphylococcus aureus* 11.3%, both *Klebsiella pneumoniae* and *Streptococcus pneumoniae* from 10.2% isolates. Results of antibiotic susceptibility testing showed that resistance rate of *Staphylococcus aureus* to oxacillin was 10%. About 87.5% isolates of *Klebsiella pneumoniae* were resistant to inhibitor-protected penicillin, 85.7% to quinolones, and 37.5% to cephalosporins and aminoglycosides groups of antibiotics.

Conclusions: Microbiologic monitoring of recipients before living donor liver transplantation showed higher prevalence of opportunistic pathogens. These suggest producing quality preoperative preparation with a view to possible improvements in the health status of the intended recipient and the elimination of factors that could adversely affect the operation and during the postoperative period.

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THE OUTCOMES OF DONOR OPERATIONS IN 82 LIVING DONOR LIVER TRANSPLANTATION IN TRANSPLANTATION CENTER OF AZERBAIJAN REPUBLIC

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Background: In this presentation we want to show the results of donor operations in 82 liver transplantations performed for the first time in Azerbaijan in our centre. Because of the program of cadaveric organ transplantation is not exist in our Republic all liver transplantation operations are performed on living donors.

Materials and Methods: 82 living liver donors at the Hospital of Oil Workers from 2008 till 2016 are selected for study.

Results: Our Transplantation team carried out 82 living donor liver transplantation operations at the Central Hospital of Oil Worker's from 2008-2016. The 34% of all donors are females. Postoperative complications consist 6.1% (5 patients) for liver donors when in one liver donor had developed bilioma. Percutaneus drainage of this bilioma was performed successfully and bilioma turned into biliar fistula which closed after one month without any residual signs. In one case profuse introperativ bleeding from IVC happened. Bleeding was stopped and patient had massive transfusion. Next case with complication was bleeding on the second day postoperativly, which required relaporatomy. Other complications with delayed hyperbilirubinaemia and brachial palsy were registered and treated nonoperatively.

Conclusions: In living donor liver transplantation the priority is to be careful with selection of donors in order to decrease morbidity. The main criteria if you want to be successful in donor operations are detailed investigation of donors before operations and strict protocols for their selection. The low

complication rates in this study are the signs of our strict attachments to donor selection protocols. Living donor liver transplantation is an alternative to cadaveric organ transplantation in the countries where deceased organ transplantation program is absent. This kind of advanced operations must be performed in dedicated and specialized hospitals. The outcomes are usually satisfied when these operations are performed in these centres.

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THE APPLICATION OF PORCINE GRAFT DURING LIVING DONOR LIVER TRANSPLANTATION WITH TYPE 2 TRIFURCATION OF PORTAL VEIN IN THE DONOR

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Background: The liver transplantation is modern approach of treatment of patients with end stage liver disease. Live donor liver transplant has become an accepted, effective and lifesaving alternative to deceased donor transplant (1).The advantage of living donor liver transplantation is availability of donor during emergency cases. This procedure is now performed routinely in many transplant centers, and it has provided an enormous technical innovation to the field of hepatobiliary surgery (2). The case we presenting is sample when the portal veins of the right lobe liver graft from donor with portal vein trifurcation could be remodeled with xenograft. The goal of this presentation is to share our experience of application of porcine graft for the type 2 trifurcation donor.

Case Report: 43 years old man with alcohol related liver cirrossis . Decompensation stage . Encephalopathy grade 2-3. Repitedly bleeding from esofageal varices. Patient were prepared for operation. During routine investigation of his only donor (his sister) we identified type 2 trifurcation of portal vein. After right side donor hepatoectomy it was clear that distance between anterior and posterior portal vein branches of graft is 3 sm.

The porcine graft constructed to Y shape in the backtable used for interposition between graft and recipient veins to get single portal vein anastomosis. The INR were keeped in the level of 2-3, and routine Doppler USI confirmed normal flow in the portal vein. 15 days after warfarin use the patient suffered from rare complication of warfarin induced skin necrosis. Warfarin changed to clopidoqrel and patient discharged 22nd day of operation. The results of laboratory investigations of patient are currently within normal range.

Conclusions: LTx is now considered a safe and standardized procedure with a substantially improved graft and patient survival and acceptable morbidity rates(2).Vascular variations are one of the main problems of living donor liver transplantation. Anatomic variations of the portal vein and bile duct are more common on the right lobe as compared with left lobe grafts in living donor liver transplantation (3). In this case our conclusion is type 2 trifurcation is not contraindication for the patient needed emergency OLT. And application of porcine graft is could be considered more logical than synthetic grafts in the respect of infection. It is advised this operation to be performed by the experienced team in the transplant centres.

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LUNG BIOPSY FINDINGS OF PATIENTS WITH LIVER OR RENAL TRANSPLANTATION

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Background: Solid organ transplantation (SOT) has been established as an accepted therapy for a number of end-stage organ diseases. However, mostly due to immunosuppressive agents, a variety of infectious and noninfectious pulmonary diseases are detected and they remain an important cause of morbidity and mortality. The aim of this study was to analyze the incidence of pulmonary disorders in SOT recipients and detect the outcomes of these patients.

Materials and Methods: A total of 70 liver and kidney transplant patients who underwent lung biopsy because of pulmonary symptoms between January 2000 and December 2015 were included in this study. The histopathological findings were re-evaluated and the clinical data were recorded from the patients' file.

Results: The biopsy findings of 70 patients were as follows: non-specific findings (n:28, 40%), organized pneumonia (n:2, 2.9%), tuberculosis (n:6, 8.6%), fungal infection (n:11, 15.7%), tumor (n:5, 7.1%), amyloidosis (n:1, 1.4%), diffuse alveolar damage (n:4, 5.7%), mixed bacterial infection (n:1, 1.4%) and bronchopneumonia (n:12, 17.1%). Forty-two (60%) patients died in a mean time of 54.1± 53.3 months after transplant and 24.6± 41.9 months after biopsy. Among 42 patients, 14 patients also underwent autopsy examination. Of 42 patients, the cause of death is attributed to lung disease in 18 (42.8%) patients. These lung diseases giving rise to death were fungal infection (n:8), tumor (n:4), amyloidosis (n:1), diffuse alveolar damage (n:4) and mixed bacterial infection (n:1). Overall 1st, 2nd and 3rd year survival rates were 60%, 40% and 20% respectively for patients with tumor diagnosis. Overall 1st and 2nd year survival rates were 24% and 0% respectively for patients with fungal infection. Remaining 28 (40%) patients were alive at a mean time of 109.5 ± 71.9 months after transplant and 58.6 ± 47.1 months after lung biopsy.

Conclusions: Our results emphasize that pulmonary diseases remain an important cause of morbidity and mortality in solid organ transplant recipients and fungal infections, especially aspergillosis is the major cause of early death in these patients.

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HISTOLOGIC CHANGES IN BONE MARROW BIOPSIES LIVER TRANSPLANT RECIPIENTS

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Background: Liver transplantation may be complicated by various hematological conditions indicating bone marrow biopsy. Immunosuppressive therapies, specific infections and secondary neoplasms affect bone marrow. In the present study we evaluated the histological spectrum of bone marrow findings in liver allograft recipients.

Materials and Methods: Out of 338 liver transplant recipients who were operated and followed in Başkent University, Faculty of Medicine, 44 patients underwent bone marrow biopsy. The medical and pathological information about these patients were evaluated, including age at liver transplantation, age at bone marrow biopsy, sex, primary disease, age at bone marrow biopsy, bone marrow histology, and indication for bone marrow biopsy.

Results: Out of 44 patients who required bone marrow sampling, 30 were male (68.2%) and 14 were female (31.8%). Fifteen (34.1%) patients were in pediatric age group at the time of transplantation. The most common cause of liver insufficiency leading

to liver transplantation was cryptogenic cirrhosis in 10 patients (22.8%), followed by end stage liver disease due to chronic hepatitis B and C infections in 7 patients (15.9%). The source of the graft liver was a living donor in 40 cases (90.9%). The average age of transplantation was 28.8 years and the average age of bone marrow sampling was 29.9 years. Nineteen paients (43.2%) required bone marrow sampling within the first year of transplantation. The most common histologic findings were hypocellular and normocellular bone marrow observed equally in 18 patients (40.9%) each. Six patients (13.6%) had bone marrow biopsies for the staging of post-transplant lymphoproliferative disorder (PTLD). Only one patient out of 6 PTLD cases (16.7%) had malignant infiltration of the bone marrow, which was a case of Burkitt lymphoma developed as PTLD and this was the only malignant infiltration in this patient group (2.3%). Neither specific infections nor granulomatous inflammation were detected.

Conclusions: Bone marrow morphology has an important role in the follow up of liver transplant patients, who not infrequently have peripheral blood cytopenias. The present study represents the first systematic evaluation of bone marrow findings in liver allograft recipients.

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UNRECOGNIZED CIRRHOSIS AT THE TIME OF DIAGNOSIS OF HEPATOCELLULAR CARCINOMA

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Background: Hepatocellular carcinoma (HCC) is a life-threatening and frequent complication of cirrhosis regardless of underlying etiology. Most guidelines recommend screening for HCC in cirrhosis. However, patients with compensated cirrhosis are often asymptomatic and maybe remain undiagnosed for years. The aim of this study was to determine the extent of patients with HCC with unrecognized cirrhosis at the time of first diagnosis and to analyze some features such as demographics and etiology of cirrhosis.

Materials and Methods: We reviewed the electronic medical records of HCC cases diagnosed in Başkent University Ankara Hospital January 2011 and December 2015.

Results: Of 99 patients with HCC and cirrhosis, 19 (19.2%) had unrecognized cirrhosis prior to HCC diagnosis. Of this 19 patients 15 were male and 4 were females, the age of 5 were >65 years. The etiology of cirrhosis was hepatitis B in 10, hepatitis C in 3, alcoholic liver disease in 3 and unknown in 3. There was a single lesion in 7 patients and multiple lesions the remaining 12 patients.

Conclusions: Cirrhosis was unrecognized prior to HCC diagnosis in one-fifth quarter of patients. Most of the patients had hepatitis B related cirrhosis. They tended to have multiple lesions and likely to have more advanced stage HCC. These findings emphasize the importance of timely evaluation for cirrhosis in at-risk populations as a critical step to improving outcomes for patients with HCC.

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A RARE CAUSE OF DUODENAL ULCER IN A PATIENT WITH DECOMPENSATED LIVER DISEASE

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Background: Cytomegalovirus (CMV) infection is a rare cause of infection seen mostly in immunosuppressed patients. Although colon is the most frequents site of CMV infection it can be seen in all parts of gastrointestinal tract. Mucosal lesions seen in this infection varies from mild inflammation

to deep ulcers. We present a case of duodenal CMV infection in a decompensated liver disease patient taking immunosuppressant medications.

Case Report: A 62-year-old male patient was diagnosed as decompensated chronic liver disease secondary to autoimmune hepatitis and/or primary sclerosing cholangitis 6 months prior. He was on azathioprine, prednisolone and ursodeoxycholic acid (UDCA) treatment. Upper gastrointestinal endoscopy revealed deep bulbar ulcers with *H. pylori* gastritis. An oral pantoprazole treatment was started following *H. pylori* eradication treatment. His liver functions decomposed after this and hospitalized. On admission his laboratory was compatible with decompensated liver disease with markedly elevated serum conjugated bilirubin (15.9 mg/dL). Upper gastrointestinal endoscopy revealed (4 months after his first endoscopy) esophagus varices, portal gastropathy with deep bulbar ulcers and mucosal inflammation causing strictures; the papilla was swollen (Figure 1). EUS did not reveal any significant changes. Pantoprazol dose was increased. One month later azathioprine and prednisolone treatments were ceased because of treatment resistant septic arthritis. UDCA and pantoprazole treatments continued. The duodenal changes were similar in the third-look upper gastrointestinal endoscopy which was performed at the sixth month of pantoprazole treatment. The histopathological examination of the duodenal bulb acute inflammatory cell infiltration accompanied with aggregation of lymphocytes. The presence of intranuclear inclusion bodies was also detected. CMV positive cells were immunohistochemically observed in intraepithelial cells. Serum CMV-DNA (PCR) was positive (1.68 x 10^3 copies/ml). Intravenous ganciclovir (Cymevene®) 2 x 500 mg was given for 14 days. After gancyclovir treatment, CMV-DNA (PCR) was negative. Bulbar ulcerations were recovered in the final endoscopy (Figure 2) and the histopathology was cleared from CMV. Serum conjugated bilirubin decreased to 5.5 mg/dL after the treatment.

Conclusions: We have reported a case of CMV duodenitis, with non-specific endoscopic mucosal bulbar ulcers and inflammatory changes which was treatment resistant. Although rarely seen, CMV infection of upper gastrointestinal tract should be included in the differential diagnosis of immunocompromised patients with gastrointestinal manifestations. Biopsy sampling and pathological investigations can lead to the diagnosis of CMV infection in the upper gastrointestinal tract.

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THE FIRST CASE IN KAZAKHSTAN OF SUCCESSFUL THERAPY WITH TWO CONSECUTIVE DIRECT ACTING ANTIVIRALS REGIMENS IN A PATIENT WITH HCV-INDUCED DECOMPENSATED LIVER CIRRHOSIS WAITLISTED FOR LIVER TRANSPLANTATION

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40-year old male patient was waitlisted for liver transplantation at the JSC National Scientific Center for oncology and transplantology in June 2014 due to the HCV-induced decompensated liver cirrhosis. The disease first manifested itself with swelling of the feet in 2011 with spontaneous resolution and further development of ascites in early 2014, which eventually lead to the diagnosis decompensated liver cirrhosis due to hepatitis C in April 2014. The direct acting antivirals were not registered in 2014 in Kazakhstan and the patient was first considered for antiviral therapy with pegylated interferon-alpha2 with ribavirine for 48 weeks considering genotype 1 HCV with high viremia (9.980.000 copies/ml), while waitlisted for liver transplantation. However, decompensated stage of liver cirrhosis (Child C10, MELD 13) with ascites, esophageal varices stage II, anemia and cytopenia were contraindications for the antiviral treatment with pegylated interferon-alpha2 and ribavirine and the patient was recommended therapy with the direct acting antivirals simeprevir 150 mg and sofosbuvir 400 mg daily for at least 12 weeks.

Due to unregistered status of the indicated antiviral agents in Kazakhstan, the patient started the antiviral therapy in USA in June 2014 after esophageal varices

ligation. The further dynamics in HCV viremia was as following: initial viral load prior to the start of the treatment in June 2014 – 3220400 copies/ml, week 4 – 549 copies/ml, week 8 - 39 copies/ml, week 12 – virus not detected. Negative HCV viremia resulted in normal bilirubin/ALT levels, resolution of ascites and marked improvement in overall state of the patient with downgrading to subcompensated liver cirrhosis (Child B7, MELD 8) and delisting the patient from liver transplantation. Due to the achievement of negative HCV viremia only after week 8 and recommendation to continue the antiviral therapy at least for 16 weeks, the treatment was stopped at week 12.

Follow-up at week 12 post-treatment showed HCV relapse with 320967 copies/ml and sharp increase in ALT/AST up to 21ULN/24ULN and recurrence of ascites. Taking into account previous attempt with sofosbuvir and simeprevir, alternative regimen using combination of ombitasvir 12.5 mg, paritaprevir 75 mg, ritonavir 50 mg and dasabuvir 250 mg for 24 weeks was started in January 2015. Second course of antiviral therapy resulted in rapid decline in HCV viremia, reaching undetectable level at week 4 with consequent normalization of the liver tests including ALT, AST and bilirubin. The patient demonstrated end-of-treatment and 12 weeks post-treatment sustained virological response with no detectable HCV viremia.

However, despite the undetectable HCV status, the patient started deteriorating again in October 2015, and relisted for liver transplantation. This first to be described clinical case in Kazakhstan of successful antiviral therapy with two consecutive direct acting agents regimens demonstrates importance of virus eradication in terms of pre-transplant survival extension and delaying the need for liver transplantation.

P47

SPLENIC PELIOSIS RESULTING IN SPONTANEOUS SPLENIC RUPTURE IN A CONCOMITANT HEPATIC AND RENAL TRANSPLANTATION RECIPIENT

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Background: Splenic peliosis is an exceedingly rare complication following liver and kidney transplantation with few previously reported cases. Here we present a case of spontaneous splenic rupture caused by splenic peliosis in a concomitant liver and kidney recipient.

Case Report: Twenty four years old male patient with chronic renal failure due to primary oxalosis underwent renal transplantation from his father. The graft kidney was lost due to the recurrence of oxalosis and the patient needed retransplantation in 13 months. By this time he developed end stage hepatic failure as well due to the same etiology. He therefore underwent concomitant liver and kidney transplantation from a cadaver. On the eighth day of successful transplantation he showed signs and symptoms of hypovolemia with suspicion of intraabdominal bleeding. Diagnostic laparotomy was performed yielding splenic rupture and the patient was splenectomized. The macroscopic examination of spleen displayed areas of capsular rupture, hemorrhage and parenchymal blood-filled cysts of variable diameter. Microscopically, splenic microarchitecture was distorted by numerous irregular hemorrhagic lacunes partially lined by sinusoidal endothelium accompanying extensive areas of intraparanchymal bleeding. The diagnosis of splenic peliosis was made. The patient recovered with splenectomy however the second renal allograft was lost within 2 months due to recurrence of oxalosis.

Conclusions: Peliosis is a condition characterized by multiple blood-filled cavities in a parenchymatous organs and it most frequently affects the liver. It is thought to be related to many conditions including hematological malignancies, acquired

immunodeficiency syndrome, chronic alcoholism, use of oral contraceptives and post-transplant immunodeficiency state. However, peliosis of spleen is quite rare compared to liver and it may cause spontaneous splenic rupture. Few cases of splenic peliosis were reported in renal and hepatic transplantation recipients. Although being rare, splenic peliosis and secondary splenic rupture should be kept in my mind in the post-transplantation care of renal and hepatic allograft recipients especially when unexplained hypovolemia is of concern.

P48

INTRACEREBRAL HEMORRAGE IN ORGAN RECIPIENTS

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Background: We retrospectively reviewed the medical files of 160 patients who underwent renal and liver transplantations at Ankara hospital of Başkent University during the years 2010 and 2015. Our search revealed that 9 patients experienced intracerebral hemorrhage (ICH) at different times following transplantation.

Materials and Methods: The group included 3 female and 6 male patients. The age range was between 33 and 60 years. (Table 1). Three patients were admitted to hospital after head trauma and all patients had prolonged PT and APTT values at the time of presentation with intracerebral bleeding. Sites of intracerebral hematoma inclued right frontal lobe (2 patients), right parietal and occipital lobe (3 patients), left occiptal lobe (1 patient) and left frontal lobe (3 patients). One patient with midline shift and intraventricular hemorrage underwent external ventricular drainage. The GCS (Glasgow Coma Scale) of the patients were: 3 patients with 8 points, 2 patients with 12 points, 3 patients with 11 points 1 patient with 4 points. One patient died of intracerebral hemaorrhage. Three other patients died due to unrelated causes.

Results: The major etiologic factor in ICH is hypertension seen in 72% of patients. Tumors constitute 10% and anticoagulant/antifibrinolytic therapy plays a role in 2.5-6% of cases. The remaining factors are vascular malformations, bleeding disorders,cerebral amyloid angiopathy, trauma, infarct with bleeding and sympathomimetic agents like cocaine. The treatment options include conservative approach, open craniotomy, endoscopic or stereotactic surgery, ventricular drainage and trombolysis with fibrinolytic agents.

Conclusions: Sood MM et al. retrospectively analyzed 4,958 kidney transplant recipient patients for three years and they found the risk of ICH 9.1 fold and the risk of subarachnoid hemorrhage 6.2 fold higher than the general population. Lentine et.al. reported 3-year incidence of de novo cerebrovascular disease events after transplantation as 6.8 %. A previous review from our center studied the MRI's of 216 organ transplant recipients (187 kidney, 29 liver recipients) and found 4 cases (2.2 %) with ICH secondary to end-stage renal disease. ICH may either be directly related to transplantation or it may develop secondary to some chronic parencymal disease. The third choice is that underlying reason is different from being directly related to transplantation and also different from parenchymal cerebral disease.

P49

THE ROLE OF SERUM PROCALCITONIN LEVELS IN SOLID ORGAN TRANSPLANT PATIENTS

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Background: Systemic infection is among the common complications after solid organ transplantation (SOT) and associated with increased mortality and morbidity. Since it has prognostic significance timely diagnosis and treatment are crucial. Currently used biomarkers for acute infection, neutrophil count and C-reactive protein (CRP) are not sensitive enough to identify severe bacterial infection. Procalcitonin (PCT) is a propeptide of calcitonin and it has been increasingly used as a biomarker of bacterial infection. It can differentiate bacterial from viral infection and systemic from local infection. It guides us in deciding for antibiotics in patients with lower respiratory tract infection or sepsis. In this study we aimed to evaluate the role of procalcitonin in identify infectious complications in SOT recipients.

Materials and Methods: We retrospectively evaluated the records of 86 adult patients who underwent solid organ transplantation (between 2011 and 2015) and in whom procalcitonin levels were determined at our center. Clinical and demographic variables, laboratory data were noted. Patients in whom rejection was developed, those who underwent re-transplant and receiving hemodialysis were excluded. The relation between serum levels of CRP and PCT were compared in patients who were diagnosed as having pneumonia on clinical, microbiological and radiologic findings.

Results: The mean age was 45.5 ± 13.4 (range 18-70) years and 61 (70.9%) were males. We included 26 liver, 44 kidney, 14 heart, 2 heart and renal transplant recipients. Of the 39 patients who were diagnosed pneumonia PCT was positive in 18 (46.2%). There was a significant correlation between serum levels of PCT and CRP ($r=0.45$, $P<0.001$) and neutrophil count ($r=0.24$, $P=0.025$). In 19 patients in whom no infection site was identified (culture negative, no radiologic finding of infection) serum levels of serum PCT was positive in 9 and negative in 10 cases.

Conclusions: The findings of present study indicate that PCT is a promising biomarker to detect infectious complications in transplant recipients. Physical examination and radiological findings of bacterial pneumonia may be nonspecific and in a considerable ratio of patients the site of infection could not be identified in immunocompromised patients. Serum levels of PCT guides us in the therapy of such conditions in addition to currently used serum markers of infection.

P50

BACTEREMIA AMONG IMMUNOCOMPROMISED PATIENTS: SOT RECIPIENTS EXPERIENCE MORE SECONDARY BACTEREMIA THAN OTHERS

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Background: To evaluate the epidemiology and etiology of bacteremia among immunocompromised patients including SOT recipients.

Materials and Methods: This prospective study was conducted among adult immunocompromised patients at a 288-bed university hospital from January 2012 to July 2013. Immunocompromised patients were defined as either solid organ transplant recipients (kidney, liver) or hemato-oncologic malignancy patients with a history of chemotherapy in the last month before bacteremia. A structured form was used to collect data from the patients with "significant" bacteremia. The types and etiologic

agents of bacteremia episodes were compared regarding the immunocompromised patient groups. SPSS version 11.0 was used for statistical analysis and $p<0.05$ was considered to be statistically significant. Pearson chi-square test was used as appropriate.

Results: This prospective study comprised of 167 bacteremia episodes in 130 consecutive immunocompromised patients. Fourty-nine of the 167 bacteremia episodes were seen in solid organ recipients. Twenty-nine patients (22%) had more than one bacteremia episodes. There were 172 bacterial strains isolated from 167 bacteremia episodes including polymicrobial ones. Of these 172 bacterial strains, 115 (66.9%) were gram negative and 57 (33.1%) were gram positive. The most common three pathogens were *E. coli* (%30.8, 50% ESBL positive), coagulase negative staphylococcus (15.1%, 84.6% methicillin-resistant) and *A. baumannii* (11%, 73.7% extensively drug resistant) . 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 most common source among liver transplant recipients. Gram negative bacteria were the most common agents in both transplant and malignancy groups. *E.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. *A.baumannii* was the second most common gram negative agent and the ratio of XDR isolates among *Acinetobacter* isolates was 74%. *A. baumannii* was the leading causal bacteria associated with mortality.

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 rising ratio of XDR *A.baumannii* is a striking problem which causes difficult-to-treat infections.

P51

BRIDGE-TO-TRANSPLANTATION PERIOD: VAD INFECTIONS ARE A GREAT CONCERN

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Background: Ventricular assist devices (VADs) are important treatment modalities for end stage heart failure patients because the demand for donor hearts far exceeds the supplies. The incidence of ventricular assist device related infections is 13-80%.

Materials and Methods: The ventricular asist device infections were retrospectively evaluated via patient records.

Results: A total of 24 VAD were inserted during tne April 2012 and January 2015 period at Başkent University Ankara Hospital. Infections were diagnosed in 13 of the patients; four were VAD infections; seven were bacteremia due to other causes, one pneumonia and one was urinary tract infection.

Three of four VAD infections were driveline infections and all were bacteremic. One of four VAD infections was a localized insertion site infection. Recurrences were observed for all four VAD infections.

Conclusions: Ventricular assist device related infections cause significant morbidity and mortality. There are not yet clear recommendations about the definitions, diagnostic algorithms, treatment and prophylaxis. Here, the diagnosis, clinical manifestations, therapeutic and prophylactic approaches for ventricular assist device related infections are discussed in the light of current literature.

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VENOARTERIAL EXTRACORPOREAL MEMBRANE OXYGENATION SUPPORT AS A BRIDGE TO HEART TRANSPLANTATION: REPORT OF THREE CASES

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Background: Heart transplantation (HT) is the only definitive treatment of end-stage heart failure. Venoarterial extracorporeal membrane oxygenation (VA-ECMO) is one of the several mechanical circulatory support devices used for patients with refractory cardiac failure (RCF). This technique may be used as a bridge to HT. The advantage of ECMO over other percutaneous devices results from the ease of insertion, ability to support right, left, or biventricular failure at high blood flows (1). We present our experience in 3 cases that VA-ECMO was performed as a bridge to HT in the ICU.

Materials and Methods: We retrospectively screened the data of 31 HT recipients performed between 2014 and 2016 at our center. Among them patients who were admitted to ICU before HT, did not respond to optimal medical therapy, and required VA-ECMO for circulatory support were included.

Case 1: A 51-years old male with ischemic biventicular dilated cardiomyopathy was admitted to ICU for RCF. His RCF did not improve with IV therapies and VA-ECMO support was initiated. Right femoral vein and left femoral artery with a leg perfusion cannula were performed percutaneously. HT was performed after 6 days on VA-ECMO support. He was discharged from the ICU and hospital on postoperative days12 and 19, respectively. He is on post-HT day159 and surviving right now.

Case 2: A 12-years old girl with biventricular dilated cardiomyopathy of unknown etiology was admitted to ICU because of failure of medical therapy and worsening heart failure. She suffered from a cardiac arrest 10 days after her ICU admission. VA-ECMO was initiated during cardiopulmonary resuscitation (E-CPR). Left femoral vein and right femoral artery with leg perfusion cannulae were inserted percutaneously. She gained full neurological recovery and remained on HT list. Peripheral VA-ECMO was continued for 15 days. However she had lower leg ischemia on the day24. Peripheral VA-ECMO support was converted to central VA-ECMO and continued for 7 days. HT was done on the day 22 without ECMO support. Her ECMO related complications were lower limb ischemia with no sequels, thrombosis of arterial cannula, bleeding during central VA-ECMO. She was discharged from ICU on the day66 and she is on her post-HT day72 currently.

Case 3: A 50-years old male with ischemic biventicular dilated cardiomyopathy was admitted to ICU for worsening heart failure symptoms, despite medical therapy. Although he initially improved with optimal IV therapy, he developed cardiogenic shock on day of ICU admission and VA-ECMO was commenced. Left femoral vein and right femoral artery with leg perfusion cannulae were used for vascular access. Percutaneous ventricular septostomy was performed for left ventricle venting. Peripheral VA support was continued for 23 days. He underwent HT on day28 of ICU admission. He is on his post-HT day29 currently.

Conclusions: For patients on HT list who are worsening despite optimal medical therapy VA-ECMO support is a safe and viable last resort.

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LATE CEREBROVASCULAR ACCIDENTS IN PATIENTS WITH LEFT VENTRICULAR ASSIST DEVICE

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Background: Neurological complications stemming from cerebrovascular accidents are a cause of morbidity and mortality after continuous flow-left ventricular assist device (CF-LVAD) implantation. The aim of this study is to evaluate CF-LVAD parameters that may improve that have impact on cerebrovascular accidents.

Material and Methods: Thirty seven patients with CF-LVAD implantation from January 2012 to February 2016 have been subject of our research. Seven patients has been removed from the study because they died early after CF-LVAD implantation. Average age of patients is 45.52±15.55 years. Average follow up time is 410.66±312.48 days. The neurological outcomes of ischemic and hemorrhagic cerebrovascular accidents and transient ischemic attacks were assessed.

Results: From 30 patients with CF-LVAD; 19 (63.3%) had dilated cardiomyopathy; 10 (33.3%) had ischemic cardiomyopathy, and 1 (3.3%) had acute myocarditis. Eight patients (26.6%) were identified with cerebrovascular accidents (CVA). From the patients with CVA, 5 (62.5%) had cerebral ischemia, and 3 (37.5%) had hemorraghic cerebrovascular accident. CF-LVAD with CVA and non-CVA were compared based on: age, causes of cardiomyopathy (dilated or ischemic), CF-LVAD parameters (speed, flow and power), international normalized ratio (INR), and protrombine time (PT). Our results show difference only in INR (p=0.009) and protrombine time (p=0.011). Ischemic cardiomyopathy has higher risk for CVA than dilated cardiomyopathy but it is not significant (p=0,084). CF-LVAD parameters are similar between two groups.

Conclusions: Mechanical circulatory support is an effective therapy for advanced heart failure. CF-LVAD has been shown to improve survival, functional capacity and quality of life in patients with advanced heart failures. However, long-term CF-LVAD support can result in serious complications. CVA is one of the most important complications of CF-LVAD. Our results show that CF-LVAD parameters have not improve that have impact on cerebrovascular accidents but need more patients to be evaluated.

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LIFE WITH VENTRICULAR FIBRILATION IN PATIENT WITH LEFT VENTRICULAR ASSIST DEVICE

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Background: In chronic heart failure patients, circulatory support is needed for patients who are refractory to medical therapy. Continuous flow left ventricular assist devices (CF-LVAD) are necessary for these patients and their use is scaling up. However one of the adverse effects of LVAD in cardiomyopathy is ventricular arrhythmia.

Case Report: A 58-years-old male have been followed in our clinic with ischemic heart failure since 2014. The patient was admitted to emergency service with low flow alarm and six times implantable cardiac defibrillator (ICD) shocks. He had no complaints, except dizziness when he stood up. In the ICD interrogation six times shock therapy was

detected and after that the battery life ended. Also twelve hours ventricular fibrillation was detected. Patient was hospitalized in coronary intensive care unit. Amiadarone infusion administered (300 mg bolus, 50 mg/h IV infusion), after that he was defibrillated and returned to sinus rhythm.

Conclusions: Ventricular arrhythmias are a known adverse effect of LVAD in cardiomyopathy. Ventricular fibrillation (VF) is not a lethal arrhythmia for patients supported by LVAD. Because of low pulmonary artery and pulmonary artery capillary pressure right to left passage was not blocked and circulation continued.

P55

POSTOPERATIVE PLEURAL EFFUSIONS AFTER ORTHOTOPIC HEART TRANSPLANTATION: THE ETHIOLOGY, CLINICAL MANIFESTATIONS AND COURSE

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Background: Postoperative pleural effusions (PE) are common in patients who undergo cardiac surgery as well as orthotopic heart transplantation. Postoperative pleural effusions may also occur as the postcardiac injury syndrome. Most of these effusions are nonspecific and develop as a harmless complication of the surgical procedure itself and generally has a benign course. In this study we aimed to determine the etiology, clinical and laboratory features of postoperative early and late PE in the orthotropic heart transplantation patients.

Materials and Methods: Medical records of 50 patients who underwent orthotropic heart transplantation between 2004 and 2015 at Baskent University were retrospectively reviewed. The patient's demographics, clinical and laboratory data were obtained including the etiology of heart failure, the presence of PE at chest x ray in the first year after transplantation, timing of onset, microbiological examination and biochemical analysis of PE, treatment strategies were all noted.

Results: This study included 50 (M/F:39/11; mean age 39.22 ± 13.83 y) orthotopic heart recipients. The etiology of heart failure was dilated cardiomyopathy in the most of the patients (76%). Pleural effusion was detected in 18 (38%) of the patients in postoperative period. Fifteen (15/19 and 78.9%) of the patients had PE in the first week following transplantation. Of these, four of the patients had recurrent PE. A diagnostic thoracentesis was performed in 10 of the patients. Four of them were transudative effusion, six of them were exudative and secondary to infection (n= 2) postcardiac injury syndrome (n=1) and hemothorax (n= 3). Aspergillus fumigatus was detected by quantitative culture from PE in one patient. Tube thoracoscopy drainage was performed in 10 of the patients (10/50 and 25%) and meanwhile two of the patients received antibiotic therapy.

Conclusions: Pleural effusions are frequent following cardiac transplantation. Complicated PE may occur in a small part of the patients even most of the effusions are nonspecific and have a benign course with spontaneous resolution. Early diagnostic thoracentesis could improve postoperative outcomes in these patients.

P56

THE EFFECT OF SUTURING TECHNIQUE ON POST-PENETRATING KERATOPLASTY ASTIGMATISM IN KERATOCONUS PATIENTS

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Background: The aim of this study was to determine the effect of a modified surgical technique on postkeratoplasty myopia, astigmatism, and anisometropia.

Materials and Methods: The study group consisted of 98 consecutive penetrating keratoplasties performed using 12 interrupted 10-0 nylon sutures and a tight 12-bite continuous suture and an average K reading of 46.00 diopters for eyes undergoing combined and intraocular lens exchange procedures. Penetrating keratoplasty (PK) was carried out by a single experienced surgeon (DDA). Postkeratoplasty refraction, keratometry and best corrected visual acuity (BCVA) were evaluated 1, 3, and 12 months postoperatively and 2 months after complete suture removal. Suture adjustment and selective suture removal were performed after 6 weeks in eyes with more than 3 D of corneal astigmatism.

Results: Before suture removal, the average spherical equivalent was -0.160 ± 3.59 diopters; it was -1.58 ± 3.66 diopters at the completion of suture removal at 1 year and -1.44 ± 3.72 at the last follow-up visit, averaging 20.7 months. Final refractive and keratometric astigmatism was 2.81 ± 1.82 and 4.19 ± 2.94 diopters, respectively. Anisometropia, using the spherical equivalent of the operated and fellow eyes, was 2.49 ± 2.25 diopters at completion of the study. A best-corrected visual acuity of 20/50 or better was achieved in 59% of patients.

Conclusions: Using 12 interrupted 10-0 nylon sutures and a tight 12-bite continuous suture and an average K reading of 46.00 diopters for eyes undergoing combined and intraocular lens exchange procedures is associated with a favorable keratometric and refractive outcome.

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VISUAL REHABILITATION AFTER PENETRATING KERATOPLASTY

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Background: Our purpose was to report our management strategies and their results performed for visual rehabilitation after penetrating keratoplasty (PK).

Materials and Methods: The records of 104 eyes of 98 patients (54male/44 female) who underwent PK between January 2013 and January 2015 in Baskent University Faculty of Medicine, Department of Ophthalmology were reviewed. The age, the indication for PK, interventions performed for visual rehabilitation, the duration of follow-up, the topographic and refractive astigmatism at the end of follow-up and the final BCVA were recorded.

Results: The mean age of the patients was 54±23 years. The indications for PK included keratoconus, Fuch's endothelial dystrophy, pseudophakic bullous keratopathy and corneal scarring. All surgeries were performed by a single experienced surgeon (DDA). The mean duration of follow up was 23±11.5 months. Suture adjustment and selective suture removal were performed 2 to 6 weeks and after 3 months in eyes with more than 3 D of corneal astigmatism in patients who had continuous and interrupted sutures, respectively. Spectacle correction was performed in 86 eyes (83%) and contact lenses including rigid gas permeable and scleral lenses were fitted in 18 eyes (17%) who were unsatisfied with spectacle correction mostly due to higher order aberrations or high anisometropia. Relaxing corneal incisions were performed in 23 eyes (22%) and toric intraocular lens implantation was performed in 34 eyes (33%)

with cataracts. The mean topographic and absolute refractive astigmatism at the end of follow up was 3.4±2.6 D and 3.6±1.9 D, respectively. Fifty percent of the patients had a final BCVA higher than 6/10.

Conclusions: Suture manipulation has been described for minimising early postoperative astigmatism. If significant astigmatism remains after suture removal, which cannot be corrected by optical means such as spectacle correction or contact lenses, then further surgical procedures containing relaxing incisions, compression sutures, laser refractive surgery, insertion of intrastromal corneal ring segments, wedge resection, and toric intraocular lens implantation can be performed. Although general guidelines are useful, it is important to individualize and modify the management based on corneal topography and patient expectations for the initial and subsequent visual rehabilitation.

P58

STEM CELLS: GENERAL CHARACTERISTICS AND USE IN CLINICAL PRACTICE

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Cirrhosis is a long-term consequence of chronic hepatic injury with fibrosis or end stage of progressive hepatic fibrosis. No effective therapy is currently available for decompensated cirrhosis except liver transplantation. However, this procedure has several limitations, including a lack of donors, surgical complications, immunological suppression and a high medical cost; thus, there is need for a new therapeutic paradigm in this field.

What is a stem cell?

Zygote resulting from the fertilization possesses the genetic information and power that could develop a full body. The first embryonic cell that is able to develop into any type of cell found in the bodyis called the totipotent cell stem. After the fifth day, i.e. after 2-3 cell divisions, the resulting cells take the spherical form, which is called blastocyst. The cells located inside this ball will be able to develop into all the cells in the body if the necessary conditions are provided. More specialized such cells are called multipotent stem cells. While the pluripotent stem cells are only observed in embryo during the initial stages of human development, the multipotent ones can be obtained from children and even from adults.

How are the stem cells obtained?

For clinical use, the stem cells are obtained from 3 sources:

1. Embryonic stem cells derived from human or animal embryo. They can turn into any type of cell.
2. Fetal stem. Fetal stem cells have the lower potential of differentiating into various cells.
3. Adult stem cells. Adult stem cells are found in bone marrow, peripheral blood, cerebrum and spinal cord etc.

What are the sources of adult stem cells?

In addition to bone marrow and mesenchymal stem cells, sources are as follows:

1. Umbilical cord blood.
2. Baby teeth.
3. Fatty cells.

How are the stem cells applied?

1. Allogeneic transplantation – from one person to another;
2. Autologous transplantation – re-transplantation of own cells to a person;
3. Syngeneic transplantation – donation between the twins;

How are the stem cells collected?

1. Stem cells are collected from donor's bone marrow under anesthesia with the special needles from the top of iliac bone.
2. There are such stem cells in the circulation that they can be collected from the vein with a special device.

How are the stem cells used in liver diseases?

1. Transplantation of hepatocyte-like cells – It is conducted for improving synthesis and metabolic functions.

2. Restoration of liver damage and ensuring its regeneration trying to activate endogenous progenitor cells or to reduce fibrosis tissue.

Thus, the damaged and destroyed liver tissue is replaced by new and healthy hepatocytes, and all recovery processes in organ tissues become normal. The results once again prove the importance of research in this direction for the treatment of patients with cirrhosis, and pave the way for the next research in this area.

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THE EFFICACY OF AUTOLOGOUS STEM CELL TRANSPLANTATION IN SYSTEMIC SCLEROSIS: IMMUNOPHENOTYPIC AND MORPHOLOGICAL INDICATORS

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Background: Systemic sclerosis (SSc) is the rare connective tissue disease, which is characterized by obliterating microangiopathy, manifesting in skin and internal organ fibrosis. Specific character of this connective tissue diseases is hyperproduction of autoantibodies to nucleus and cytoplasm components, coagulative system and phospholipids in combination with organ-specific autoimmune syndromes. Nowadays information about patients with SSc treated by autologous stem cell transplantation is being collected in Europe. According to preliminary data, treatment response is up to 93%. Our aim was to assess the efficacy of autologous haematopoietic stem cell transplantation (AHSCT) in patients with treatment-refractory SSc by determining immunophenotyping, morphology and electron microscopy data.

Materials and Methods: AHSCT had been conducting in 16 patients with SSc, II-III activity stage, aged 45.83±9.89. Mean disease duration was 12.35±8.39 years (M±SD). All patients gave an informed consent to the research. The clinical trial was allowed by Ethics Committee. Patients were treated with HSCT according to the scheme - 0-3-6-12 months. Bone marrow was taken from the posterior crest of iliac bone by multiple punctures. Mononuclear fraction of stem cells was isolated and cultured with following intravenous cells infusion. Results were evaluated by changes in ESR, CRP, y-globulin, fibrinogen, anti-nuclear antibodies (ANA) and the cytokine profile. To understand the therapeutic mechanisms of HSCT stem cells were immunophenotyped by flow cytometry. The morphology of skin assessed by stain with hematoxylin-eosin and Masson's trichrome before AHSCT and 6, 12 months after transplantation. Statistical data analysis was performed using Mann-Whitney non-parametric analysis, Spearman correlations and linear regression.

Results: According to our results there was a significant decrease in granulocytic and megakaryocytic lineages after transplantation of stem cells, that evidenced by an increase in neutrophils maturation index. Hematopoiesis after HSCT got normoblastic type and the bone marrow had cell composition. The expression of the immune cells CD3, CD4, CD8, CD16, CD19, CD20 decreased, whereas the cells carrying CD38 marker increased noticeably after HSCT. A significant decrease in ESR according to 4 transplantations was 24.25±11.16, 21.97±13.01, 20.83±9.36, 19.00±9.44 respectively ($p < 0.05$). The level of CRP, fibrinogen, y-globulin also decreased. The disease-related ANAs declined to within the normal range. Skin morphology of SSc patients before AHSCT was characterized by fibrosis, thinning of the epidermis and presence of different subtypes of fibroblasts. 6 months after

HSCT the morphological assessment revealed reduction of collagen sediments and decrease the number of fibroblasts. The most visible diminution of fibrous tissue was marked around newly formed blood vessels.

Conclusions: Autologous stem cell transplantation is highly effective method of treatment of SSc. With AHSCT it becomes possible to achieve the stabilization and regression of immunophenotypic, serological markers, morphological pattern of fibrosis and decrease the progression of disease.

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PHENOTYPIC ANALYSIS OF CORD BLOOD STEM CELLS AT EARLY GESTATION

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Background: Today theme about the umbilical cord blood still have relevance and importance became urgent because of the growth of blood system diseases, including malignancies (leukemia, anemia, etc.), the immune system, neurological and autoimmune diseases. As is known the great advantage of cord blood is the ability content in it hematopoietic stem cells to differentiate into cells of the blood and immune system. According to some authors the cord blood can be also a source of mesenchymal stem cells which can start the growth process of adipocytes, chondrocytes cells and muscle tissue. Analysis of lymphocyte subpopulations in the culture of stem cells obtained from umbilical cord blood at early gestation using monoclonal antibodies.

Materials and Methods: The umbilical cord blood of human fetus was obtained from abortive material in the presence of informed consent pregnant women, age was 19-35 years by ex utero gestational age of 17-19 weeks. The culture was cultivated in DMEM («Sigma», USA) supplemented with 10% FBS and antibiotics. Mononuclear cells were isolated by gradient centrifugation method of ficoll`s density gradient with density d=1,077 g/cm^3, samples treated with the lysis solution for destruction of red blood cells. Isolated mononuclear fractions of cells were cultured in culture flasks of 75 cm^2 in a CO_2 incubator at + 37 ° C and 5% carbon dioxide content. Cell samples were taken for analysis on the third day of culture. Research conducted of lymphocyte subpopulations in the culture of stem cells obtain from human umbilical cord blood at the early stages of gestation were lead using monoclonal antibodies by cytofluorometer FACS Calibur Becton Dickinson company.

Results: The result is a two gates of cells. Gate №1 (50,53%) with the characteristics of the light scattering of cells:

FSC (forward scatter index) in the range 487-770

SSC (side light scatter index) in the range of 468-980

Gate №2 (20,45%) with the characteristics of the light scattering cells:

FSC (forward scatter index) in the range 169-407

SSC (side light scatter index) in the range of 38-210

Conclusions: These results present that the culture of stem cells obtained from human fetal cord blood in the early stages of gestation (17-19) comprises hematopoietic progenitor-cells CD 45, CD 34, CD 105, CD 11b, CD 14, as well as in bone marrow. In the presence of culture mesenchymal stem cells, characterized cell markers CD 44+, CD 45, CD 90+, CD 105+ shows that cord blood is a valuable source of mesenchymal stem cells, which gives great hope for modern medicine.

Gate №1		Gate №1	
Researching CD and coexpression	Results (%)	Researching CD and coexpression	Results (%)
1. CD31+	94,02	1. CD31+	81,86
CD38+	0	CD38+	0,06
CD31+ /CD38+	5,23	CD31+/CD38+	7,35
2. CD4+	89,63	2. CD4+	88,07
CD73+	0	CD73+	0,71
CD4+/CD73+	0	CD4+/CD73+	6,08
3. CD4+	81,76	3. CD4+	84,79
CD34+	0	CD34+	0
CD4+ /CD34+	4,06	CD4+ /CD34+	4,3
4. CD4+	42,94	4. CD4+	82,94
CD58+	3,53	CD58+	0
CD4+ /CD58+	4,23	CD4+ /CD58+	0
5. CD4+	3,14	5. CD4+	25,13
CD8+	1,93	CD8+	28,89
CD4+ /CD8+	0,62	CD4+ /CD8+	65
6. CD15+	91,23	6. CD15+	17,71
CD11в+	0,07	CD11в+	1,48

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CD15+ /CD11в+	7,88	CD15+ /CD11в+	1,4
7. CD116+	41,11	7. CD116+	94,48
CD11c+	0,72	CD11c+	0
CD116+ /CD11c+	54,28	CD116+ /CD11c+	1,3
8. CD44+	97,13	8. C44+	96,18
CD117+	0	CD117+	0
CD44+/CD117+	0,1	CD44+/CD117+	0
9. CD45+	99,92	9. CD45+	76,27
CD34+	0	CD34+	0
CD45+ /CD34+	0,08	CD45+ /CD34+	0,17
10. CD90+	65,1	10. CD90+	89,3
CD152+	0,87	CD152+	0
CD90+ /CD152+	25,49	CD90+ /CD152+	0,65
11. CD20+	30,45	11. CD20+	42,61
CD29+	1,42	CD29+	6,73
CD20+ /CD29+	63,73	CD20+ /CD29+	38,07
12. CD11a+	79,49	12. CD11a+	80,29
CD19+	0	CD19+	0,33
CD1a+ /CD19+	0,08	CD1a+ /CD19+	3,55
13. CD16+	34,85	13. CD16+	40,3
CD29+	0,02	CD29+	1,81
CD16+ /CD29+	64,8	CD16+ /CD29+	50,44
14. CD25+	4,29	14. CD25+	26,49
CD141+	0,02	CD141+	0
CD25+ /CD141+	0,1	CD25+ /CD141+	0
15. CD50+	99,82	15. CD50+	72,27
CD54+	0	CD54+	0
CD50+ /CD54+	0,6	CD50+ /CD54+	0
16. CD105+	30,68	16. CD105+	32,12

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THE RESEARCH OF SPECTRUM OF BIOLOGICALLY ACTIVE SUBSTANCES IN THE CONDITIONED MEDIUM, BY CULTURING OF HUMAN FETAL SKIN FIBROBLASTS

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Background: to study the composition and concentration of biologically active substances in the conditioned medium, obtained by culturing the fetal fibroblasts of human skin.

Materials and Methods: The culture of dermal fibroblasts was isolated from human fetal skin, then cultured in a nutrient DMEM / F12 with 5-10% fetal bovine serum, content with the addition of the antibiotic ceftriaxone. When replacing the culture medium with fresh, obtained the conditioned medium from fibroblast. The composition and concentration of biologically active substances in the conditioned medium, derived from fetal dermal cells, were examined by ELISA.

Results: At allocation the cells from a normal fetal skin cell cultures were obtained, similar in morphology to the skin fibroblasts. They were mainly spindle-shape and process. In the study of conditioned medium from fetal fibroblast, we found that it is composed of a certain spectrum of biologically active substances, including cytokines. Such as vascular endothelial growth factor, transforming growth factor β-1, basic fibroblast growth factor, matrix metalloproteinase, angiopoietin, pentraxins-3 as well as the adhesion molecules vascular endothelial 1, intercellular adhesion molecule 1, intercellular adhesion molecule 3, have been composed in the fibroblast conditioned medium. Thus, there was a large release of transforming growth factor β-1, matrix metalloproteinase, angiopoietin, pentraxins-3. All of them play a key role in stimulating angiogenesis (the formation of blood vessel, from pre-existing) and also have value in the diagnosis of cardiovascular diseases such as inflammatory biomarkers**.**

Among cytokines there were interleukin 6, interleukin 8, interleukin 10, interleukin 12, interferon γ. Thus, there was a large release of interleukin-6 and interleukin 8. Their role has long been proved in the regulation of immunity.

Conclusions: The received results represent scientific interest for studying of structure of metabolites the fetal cells, that determine the optimal development of own skin cells, when cultured in vitro and also have practical significance to improve the efficiency of the method of transplantation of fetal stem cells, and a fundamentally new approach to the treatment of patients with serious disease.

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ABSORPTION SPECTROPHOTOMETER IN RESEARCH SUPERNATANT FETAL LIVER TISSUES

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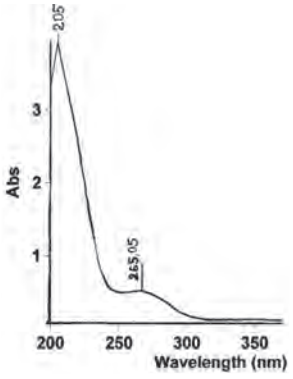
Background: The supernatant of fetal liver tissue contains substances that absorb radiation in the ultraviolet and visible spectrum. Method of absorption spectrophotometry installed SFFT spectral characteristics: absorption maxima at λ = 575nm, λ = 545-540 nm, λ = 415 nm, λ = 345-340 nm, λ = 265-260 nm, λ = 220-200 nm and minimum absorption at λ = 560 nm. The analysis was performed using a spectrophotometer «Varian» Cary 50 UV scanning mode. Now different kinds of cell therapy are becoming increasingly relevant for the application as new ways to treat and prevent human diseases. The special attention of researchers is drawn by questions on studying of structure and the mechanism of action of cages on an organism. The russian scientists have conducted original research of cellular composition of the liver and spleen in the fetal period. Was made the comparative proteomic and transcriptome analysis of human fetal liver. The composition of the protein-peptide complex cryopreserved human fetal tissues and juvenile tissues of newborn rabbits was studied by UV spectrophotometry, chromatography. In laboratory of the Center of cellular technologies and transplantation in the process of allocation of isolated fetal hepatocytes cell culture supernatant, we obtain fetal liver tissue (TASF) having biological activity. The aim of the work was to determine the spectrum of TASF rights, and to establish the presence of biological agents which absorb in the UV range and visible.

Materials and Methods: The materials of the study were samples of FTS, presented laboratory CCTandT of "NCMRC." Storage of samples was carried out under conditions of TASF cryopreservation. For analysis TASF samples were thawed in a water bath at a temperature of 370C, and then centrifuged, and the resulting supernatant was diluted with 0.9% sodium chloride solution to reduce the absorbance to values, that allow the use of standard 10 mm ditches. The analysis was performed under standard conditions by spectrophotometry in the scanning mode. The researches were conducted with a spectrophotometer «Varian» Cary 50 UV, operated by software Cary WinUV, in the laboratory TF RSE "National Center for Expertise of medicines, medical devices and medical equipment" Astana (Director Nysanbaev Zh.M, Head Laboratory Rakhimzhanova P .T.).

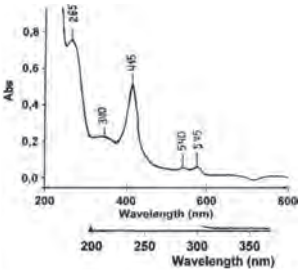
Results and Discussion: The samples of SFTP were scanned in the range of two spectral regions: the near UV 200 - 380 nm and an apparent 380 - 760 nm (Figures 1 and 2). In the visible region of the spectrum absorption bands with maxima at 575 nm, 545-540 nm, 415 nm. Between the peaks of 575 nm and 545-540 nm has a minimum at 560 nm. In the UV absorption bands: at 340-345 nm and 260-265 nm, most absorption maximum at 200-220 nm. The presence of two absorption bands in the yellow-green region of the visible spectrum with a maximum in the wavelength range 575-579 nm and 540-544 nm, in the violet portion of the spectrum peak in the range of 410-416 nm and a minimum at 560 nm corresponds to the spectra of oxyhemoglobin, fetal hemoglobin. Maximum range at 260 nm characteristic of nucleic acids, oxidized forms of nicotinamide coenzymes NAD and NADP, maximum at 340 nm is observed when passing oxidized forms (NAD) to the reduced form (NADH). Absorption maxima at a wavelength between 200-225 nm and 270-290 nm characteristic of the protein solution. The absorbance at 270-290 nm by the presence in the molecule of the aromatic amino acids of the protein.

Figure 1. The spectrum of SFTP in the interval 200-380 nm



Poster

Figure 2. The spectrum of SFTP in the interval 200 - 800 nm



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PROSPECTS OF CELL THERAPY AS A DERIVED DERMAL FIBROBLASTS IN VITRO

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Methods of cell therapy, which use for restoration and bio-stimulation of the skin, intradermal cell injection , recently received widespread.

Among the many types of cells capable of exerting the clinical effect, of particular interest are the dermal fibroblasts which are a heterogeneous population of cells of mesenchymal and several play a key role in the regulation of cellular interactions and homeostasis of the skin.

Fibroblasts formed not only optimal conditions for functioning and proliferation other types of cells (epithelial, endothelial, hair follicle cells), but also is responsible for the coordination of their functions in accordance with the location on the body.

The ability of fibroblasts to form extracellular matrix, to synthesize cytokines, to induce migration and proliferation of different types of cells in the skin lesions makes them promising for widespread clinical use.

Renewable (regenerative) medicine - a generic term for a variety of medical and surgical cellular technologies (organ regeneration and tissue engineering), aimed at the partial or full compensation for damaged or lost functions of organs (tissues).

Initially, for the cell therapy offer the use of embryonic cell lines of fibroblasts of human isolated from umbilical cord blood, as well as linear diploid embryonic fibroblast lung of human.

However, introduction of (allogeneic) embryonic stem cells, in addition to the ethical issues which arise in connection with the use of human embryos, faced with the problem of side effects in the form of an immune response in the patient.

At present not only in the regenerative medicine and cosmetology, developed approaches to the use of autologous dermal fibroblasts and also autologous undifferentiated mesenchymal cells.

So, based on studies by Russian scientists Tkachuk V.A., Sysoev V.Y., Parfenov E.V., Kalinina N.I., and Rubin KA, cultivation of fibroblasts was convincingly shown that autologous fibroblasts which were grown in vitro, on condition while maintaining them in certain conditions, can fully save their physiological functions.

According to many authors, established, dermal fibroblasts, obtained from skin biopsies of human, has high level of secretory activity and produce the components of the adhesive system cells (receptor of hyaluronic acid - CD44) and the extracellular matrix involved in the maintenance of turgor and elasticity of the skin (procollagen type I, collagen type IV, fibronectin and tropoelastin).

These facts determined the fundamental possibility of using cultures of dermal fibroblasts in practical medicine and cosmetology. Treatment of skin defects using cultured cells in vitro has been widely recognized throughout the world as a safe and effective method.

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EARLY EXPERIENCES ON LIVING DONOR LIVER TRANSPLANTATION IN AZERBAIJAN REPUBLIC: SINGLE CENTER REPORT

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Background: 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 disease die waiting for a suitable donor. Living donor liver transplantation (LDLT) would reduce the organ shortage. The living donor liver transplantation program in Azerbaijan has been started from 2008. We describe the early experience of LDLT based on data of our transplant center.

Materials and Methods: Between December 2008 and January 2016, 82 patients with end-stage liver disease received LDLT in our center. The indication and timing, surgical techniques and complications, nonsurgical issues including rejection, infection, advantages of LDLT, and patient and graft survival rates in the series were reviewed.

Results: All LDLT recipients were cirrhotic patients, except for one patient with fulminant hepatic failure. Among the 82 cases of LDLT, 34 (41.4%) and 28 (34.1%) were related to hepatitis C and B, respectively. Other causes included NASH 5 (6%), Wilson disease 2 (2.4%), Budd-Chiari syndrome 2 (2.4%), Alcohol-related 4(4.8%), PBC 1 (1.2%), GDD 1 (1.2%), Biliary Artesia 1 (1.2%) and Cryptogenic 4 (4.8%). 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(3.6%) and for 2 (2.4%) patients retransplantation was performed. Biliary strictures had been managed and resolved by biliary stenting for 5 patients and hepaticojejunostomy in 3 patients.

Conclusions: LDLT 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 early technical hurdles having been overcome, perfection of technique is still necessarily. At present, LDLT is a good choice for the patients with irreversible liver disease.

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PROBLEM SOLVING SKILLS OF TRANSPLANTATION NURSES

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Background: The research is carried out as an identifier in order to characterize how the transplantation nurses, who work in 30 different transplantation centers around Turkey and who attended transplantation nursing courses, evaluate the problem solving skills of the transplantation nurses.

Materials and Methods: Without sampling, all the participants of the courses were included in the work and all the nurses were contacted. The data has been collected via data question for and problem solving inventory. This inventory reveals the self assessment of individuals as a problem solver and the perception of problem solving skills. The gathered inventory scores have been analysed in 3 subcategories.

Results: Problem solving scores of nurses are 64.69 min, 113.92 max and 83.57 ± 10.43. As a result of the research, nurses have scored 40.23±5.38 in precipiant approach aspect, 8.57±2.81 thinking aspect, 5.38±2.76 in avoiding aspect, 6.00±1.78 in evaluated aspect, 12.1±3.23 in self confidence aspect and 7.87±3.1 in planned approach aspect.

Conclusions: These results indicate that the transplantation nurses identify themselves as avoiding precipiant approach, acting thoughtfully, in ± evaluator aspect, self confident and planned positive individuals.

Table 1. Descriptive Characteristics of Nurses

Descriptive Characteristics	Number	%
Age		
≤ 29 Age	8	26.7
30-34 Age	8	26.7
≥35 Age	14	46.7
Gender		
Female	28	93.3
Male	2	6.7
Marital status		
Married	16	53.3
Single	14	46.7
Educational Background		
High school	4	13.3
Associate's degree	4	13.3
University	15	50.0
Master	7	23.3
Positions		
Specialist Nurse	10	33.3
Clinical Nurse	15	50.0
Education Nurse	5	16.7
Working Authority		
Public institutions	23	76.7
Private hospitals	7	23.3
Income Status		
Revenue from high costs	4	13.3
Equivalent to the income and expense	21	70.0
From low income and expense	5	16.7
Working Years		
0-4 years	5	16.7
5-9 years	6	20.0
10-14 years	8	26.7
≥15 years	11	36.7
Organ transplant nurse working years		
≤4 years	18	60.0
≥5 years	12	40.0
Organ transplantation receive training		
Yes	4	13.3
No	26	86.7
Problem solving receive training		
Yes	3	10.0
No	27	90.0
Problem-solving self perception situations	26	86.7
Successful	4	13.3
Partially successful		

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AN IMPORTANT PROBLEM: WEIGHT GAIN AFTER KIDNEY TRANSPLANTATION

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The purpose of this review is to show the reasons of the weight gain experienced by the patients after kidney transplantation as well as the significance of prevention of these reasons.

It is known that the body mass index (BMI) and weight gain after kidney transplantation are serious health problems. The mean BMI increases significantly in the 6th month following kidney transplantation and this increase causes serious problems especially in individuals who are obese or malnourished before the transplantation. The weight gain following the transplantation is widespread and can be observed among patients who are and are not obese before the transplantation. The weight gain appears frequently in the first year following the transplantation and it is reported to be a common problem for the patients within the first 6 months. It is observed that the weight gain varies between 6 and 10 kg and the change in mean BMI varies between 2 and 3.8 kg/m2 following the transplantation.

A better understanding of the underlying mechanisms of the weight gain requires the development of preventive measures. It is observed that the potential factors causing the weight gain after kidney transplantation are the use of immunosuppressive medications to protect the newly implanted organ and the changes in life style such as dietary intake in addition to insufficient physical activity. Additionally, the weight gain is affected by factors such as age, gender, race, lack of acute rejection, genetics and psychological factors related to stress.

The food consumption of patients increases after the transplantation. In addition to dietary intake, the level of physical activity may affect the weight following the transplantation.

It was found that the effects of the immunosuppressive medications such as steroids used after the transplantation were correlated with weight gain related to the increased appetite in patients. Obtaining recovery in graft function for a long term and reducing the side effects of medications for hypertension, dyslipidemia, and obesity based on weight gain and are dependent on minimizing the use of steroid. In a study conducted to determine the relationship between use of steroids and the weight, percentage increase of the weight was determined as 9% in the 36th month after transplantation among patients using steroids. In this study, it was stated that steroids made contribution to increased appetite and weight gain.

As a result of a retrospective study, the significance of analyzing the interaction of factors causing the excessive gain weight within the first year after kidney transplantation was emphasized. It was also stated that the related studies would provide data to support

the individual care. In this study, it is suggested for the nurses to set realistic and achievable targets and apply the medically reliable individualized weight management and obesity interventions.

In conclusion, a better understanding of food intake, physical activities and environmental factors (e.g. age, gender, race, use of immunosuppressive medications) causing the weight gain after the kidney transplantation and the development of dietary intake and physical activity protocols specific to individuals would be helpful for the healthcare professionals.

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THE EXPERIENCE OF FIRST ORGAN TRANSPLANTATION BY NATIONAL MEDICAL TEAM IN INDEPENDENT POST-SOVIET AZERBAIJAN

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Background: The descriptive nature of the thesis reflects the way and prerequisites for the appearance of organ transplantation in the post-Soviet independent Azerbaijan. 4 renal transplantation operations were first performed in the republic already in 1971 in the Soviet period. Further, this work was suspended. All such factors as stagnation caused by the collapse of the Soviet Authority, wearing of medical equipment, risk level waved doctors away from transplantation. Reinvention of traditions in this sphere was observed only in the period after independence. In the first years of independence, when Azerbaijan was in war and experienced economic difficulties, the situation in the sphere of public health was not promising. Restoration in the sphere of public wealth was only due to the prudence and credibility of the all-nation leader – Heydar Aliyev. Formation of a legal background for the transplantation of organs is a reference point for the start of organ transplantation. On October 28, 1999, the law of the Republic of Azerbaijan "On the transplantation of human organs and (or) tissues", which quite specifically indicates all items: procedure of transplantation, donors, and conditions of transplantation was adopted. However, first steps in the sphere of organ transplantation in Azerbaijan were made only in 2008.

Case Report: On September 16, 2008, at the Central Hospital of Oil Workers the first renal transplantation in Azerbaijan was successfully implemented by initiative of departed head doctor Fakxraddin Javadov. For this purpose before the operation there were chosen 10 patients whose donors were their closest relatives. Cross-match analysis was carried out in a laboratory in Ankara city. First of all, there were selected two patients, and operation day was set only for one of them. Patient N. Mammadov, born in 1991, for a long time suffered from renal insufficiency. He was on dialysis since 2007. His donor was his birth mother (51). Before entering the hospital, she passed medical examination including collection of anamnesis and physical examination, as well as extended laboratory examination. The operation was performed without any complication. The process of operation was attended by a whole transplantation team of the Central Hospital of Oil Workers. All medical personnel which participated in the operation has been trained on all the stages of transplantation, including extraction, storage, and direct transplantation in the Gazi University, Turkey for a period of time. Postoperative period was uneventful. The patient every year passes complete examination and feels well.

Conclusions: First renal transplantation implemented by national medical team gave rise to the era of transplantation in Azerbaijan. It became possible also due to the following factors:

1) Due to adoption of the law on organ transplantation which is legal foundation for transplantation

2) Development of healthcare infrastructure due to the strong will of the leadership of the Republic under the conditions of military conflict;

3) Available personnel with education in this sphere;

4) Provision of patients with necessary medication before and after transplantation at the expense of the State.