Official Journal of the Iranian Society of Nephrology

IJKD IRANIAN JOURNAL OF KIDNEY DISEASES

AIMS AND SCOPE

The Iranian Journal of Kidney Diseases (IJKD), a peer-reviewed journal in English, is the official publication of the Iranian Society of Nephrology. The aim of the *IJKD* is the worldwide reflection of the knowledge produced by the scientists and clinicians in nephrology. Published every 2 months, the *IJKD* provides a new platform for advancement of the field. The journal's objective is to serve as a focal point for debates and interchange of knowledge and experience among researchers in a global context. Original papers, case reports, and invited reviews on all aspects of the kidney diseases, hypertension, dialysis, and transplantation will be covered by the *IJKD*. Research on the basic science, clinical practice, and socio-economics of renal health are all welcomed by the editors of the journal.

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&
16th International Congress of Nephrology, Dialysis, and Transplantation

Shiraz 2017

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ABSTRACTS

First Day

Wednesday, May 17

O 101

Prediction of Potential Biomarkers and Molecular Pathways Associated with Membranous Nephropathy Based on Protein-Protein Interactions

Kalantari Shiva, Taherkhani Amir, Nafar Mohsen

Shahid Beheshti University of Medical Sciences, Tehran, Iran

Introductions. Membranous nephropathy (MN), is the most common cause of nephrotic syndrome in adults that leads to end stage renal disease with an unknown molecular mechanism and signature. The present study aims to characterize MN molecular signature and facilitate the systematic discovery of diagnostic candidate biomarkers, molecular pathway and potential therapeutic targets using bioinformatics predictions.
Methods. The protein-protein interaction (PPI) network of an integrated list of downloaded microarray data, differential proteins from a published proteomic study and a list of retrieved scientific literature mining was constructed and analyzed in terms of Functional modules, enriched biological pathways, hub genes, master regulator and target genes.
Results. Network analyses revealed several functional modules and hub genes including VDR, RXRA, IL-8 and SH3G2. TEAD4 and FOXA1 were identified as the regulatory master molecules. LRP1 and ITGA3 were identified as the important target genes. Extracellular matrix organization, cell surface receptor signaling pathway, defense and inflammatory response were found to be impaired in MN using functional analyses. A specific subnetwork for MN was suggested using PPI approach.
Conclusions. Omics data integration and systems biology analysis on the level of interaction networks provides a platform for identification of pathway-specific biomarkers.

O 102

The Incidence of C4d Positive Lupus Nephritis and Correlation with Clinic-Pathologic Findings

Malakoutian Tahereh,[1] Amouzegar Atefeh,[2] Asgari Mojgan,[1] Shooshtarizadeh Tina[1]

[1]Hasheminejad Kidney Center, Tehran, Iran
[2]Firoozgar Hospital, Tehran, Iran

Introductions. Lupus nephritis (LN) is a serious complication of SLE. Complement system activation which leads to production of C4 and its ultimate product, C4d, play an important role in the pathogenesis of LN. Although serum C4d levels correlate with disease activity, there is almost no study on the correlation between tissue deposition of C4d and classes of LN.
Methods. Seventy two patients with a diagnosis of SLE who met ≥ 4 criteria of ARA were enrolled in this study. Blood levels of Anti-Nuclear Antibody (ANA), Anti double stranded DNA (Anti ds DNA), C3, C4, Creatinine, aCL, aPL antibodies and Anti β2 GP1 were measured and 24 hours urine was collected. All patients underwent a renal biopsy. LN was categorized for them according to WHO classification and tissue samples were stained for C4d regarding diffuse granular deposition along the glomerular capillary loops.
Results. LN class IV was the most prevalent which was seen in 42 patients (58.3%) and LN class I had the least prevalence. There was no correlation between positive C4d staining and different classes of LN ($P > 0.05$). There was also no correlation between positive ANA or Anti ds DNA tests and classes of LN ($P > 0.05$) but significant correlation between positive Anti ds DNA and C4d positive LN was found ($P = 0.05$). Likewise there was no correlation between antiphospholipid syndrome (APS) and positive C4d staining ($P = 0.47$) and no correlation between the low levels of complements and classes of LN or C4d positivity was detected.
Conclusions. The presence of C4d indicates activation of classical complement pathway in LN. C4d deposition in glomerular capillaries of LN does not indicate the present disease activity but may be a useful marker to predict the prognosis of LN. Anti-ds DNA is a valuable test in disease activity and is correlated with C4d positive staining.

O 103

Adsorbing Capacity of Cross Linked Polyelectrolyte (CLP) in Effluent Fluid of Hemodialysis Patients, An

Experimental Study

Tayebi-Khosroshahi Hamid, Abedi Behzad

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Introductions. One of the most important issues in patients with chronic kidney disease (CKD) and congestive heart failure is fluid retention and volume overload accompanied by retention of nitrogenous waste products and some electrolytes. The aim of the present study was to evaluate the efficacy of Cross Linked Polyelectrolyte (CLP) on adsorption of fluid, nitrogenous waste products and electrolytes.
Methods. In an experimental study on 30 hemodialysis patients, the effect of CLP on adsorption of fluid, urea, creatinine, uric acid, sodium and potassium of dialysate effluent were evaluated. 500 ml of effluent fluid of each patient were collected at the begining of dialysis. The concentrations of urea, creatinine, uric acid, sodium and potassium of fluid were measured by standard methods. Then effluent samples were treated with 6g CLP and incubated for 4h at 37°. The efficacy of CLP on adsorption of water, and waste products was evaluated. Statistical analysis was performed using SPSS software and result was presented as mean ± SD and P value was set at 0.05.
Results. Up to 80% of effluent fluid water was adsorbed by CLP. There was significant reduction of urea, creatinine, uric acid and sodium in the remaining effluent fluid ($P < 0.001$). In contrast, the amount of potassium has been increased in the effluent fluid.
Conclusions. In conclusion, this study showed that CLP can adsorb significant amount of fluid and nitrogenous waste products and in the future it may be used to reduction of dialysis dose especially in volume overload patients.

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Elevated Levels of miR-423 in Plasma Samples of Renal Transplant Recipients with Interstitial Fibrosis and Tubular Atrophy

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Introductions. MicroRNAs (miRNAs) are small noncoding RNAs and are involved in the set of diverse pathways associated with chronic allograft dysfunction (CAD), a foremost cause of renal graft loss. The present study aimed to determine whether or not circulating miR-423 could serve as predictors of graft outcome in the renal transplant recipients with CAD.
Methods. To evaluate the expression level of miR-423, we used quantitative real-time PCR (qPCR) and analyzed the plasma samples of 53 renal transplant recipients; 27 recipients with stable graft function (SGF), 26 recipients with biopsy-proven interstitial fibrosis and tubular atrophy (IFTA) and 15 healthy controls. The correlation between the clinicopathological parameters and the miRNA was also evaluated.
Results. MiR-423 ($P < 0.001$) was differentially expressed between IFTA and SGF plasma samples. Moreover, miR-423 correlated with creatinine ($r = -0.431$, $P = 0.028$) and eGFR ($r = 0.432$, $P = 0.028$) significantly. Receiver operating characteristic (ROC) analysis indicated that miR-423 possessed the diagnostic value for discriminating most of IFTA from SGF recipients with the areas under the curve (AUC) of 0.75 and 75% sensitivity and 70% specificity.
Conclusions. The results suggest that aberrant plasma levels of miR-423 may be associated with the renal allograft dysfunction. Therefore, it can be used for monitoring renal recipients besides other validated markers.

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The Incidence and Risk Factors of Acute Renal Failure After Heart Transplantation Surgery

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Introductions. Acute renal failure (ARF) is one of the most serious complications of heart transplantation. Its incidence varies between 7 to 30%. ARF requiring renal replacement therapy develops in 2% to 8% of patients and is associated with a very high mortality. Ischemic injury of the kidney, exotoxins (antibiotics, anesthetic agent, contrast media, diuretics), endotoxins (myoglobin), and preexisting renal impairment predispose to acute postoperative renal failure. This observational study evaluated the incidence and risk factors of ARF in 126 consecutive adult patients who underwent heart transplantation in a university medical center at Iran.

Methods. Perioperative variables measured were age, sex, BMI, reasons of heart failure, comorbidities like diabetes, hypertension, preoperative renal impairment defined as creatinine > 1.4 mg/dL, ventricular dysfunction, preoperative neurologic event, chronic obstructive pulmonary disease, use of intra-aortic balloon pump (IABP) before transplantation, drug history before transplantation, cardiopulmonary bypass (CPB) duration, emergency surgery, hemorrhage, blood transfusion, and postoperative need for RRT,accompanied by measuring urine output in operating room and 6,12 and 24 hours post anesthesia induction and biochemical laboratory follow up with daily measurement for 5 days post transplantation.

Results. According to RIFLE criteria from 126 adult patients underwent heart transplantation, 48.8% categorized in Risk, 8% in Injury, and 2.4% in failure group during the first day after post heart transplantation whereas 2.1% of the patients needed renal replacement therapy. Age, emergency surgery, IABP devicebefore surgery, anemia after transplantation, diabetes, longer CPB duration, and preoperative renal impairment, serum Aspartate aminotransferase and Alanine aminotransferase levels before transplantation and at the third and fifth days post operation, mean ischemic time during the operation, use of Voluven (tetrastarch), dose of Epinephrine, Norepinephrine Furosemide and Tacrolimus in first 24 hour after transplantation, and any need to use of ECMO, were independently associated with acute renal failure at a multivariate analysis.

Conclusions. This study confirms that acute renal failure is one of the major complications after cardiac transplantation surgery, identifies the risk factors, and suggests that optimizing peri-operative cardiac and liver functions and reducing ischemic and CPB time during operation along with reducing the dose of some inotropes, diuretics and immunosuppressive agents and avoiding tetrastarch could improve the outcome of patients at high risk of acute renal failure post heart transplantation surgery.

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Myocardial Infarction, Triggered Thrombotic Microangiopathy

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Introductions. Thrombotic microangiopathy (TMA) or Thrombotic thrombocytopenia purpura (TTP), characterized by microangiopathic hemolytic anemia, thrombocytopenia, renal and neurologic involvement, pyrexia, and skin purpura. Patients rarely exhibit the full pentad. Deficiency of ADAMTS 13 metalo-proteinase that cleaves the Von-willberandfactor (Vwf) is the main cause of primary TTP. Various triggers have been identified including bacterial and viral infection, tumor, and collagen vascular disease. TTP induced microvascular thromboisis and myocardial infarction has also been described in a few reported cases. Here we describe two cases of myocardial infarction induced TTP over a period of 15 years' experience (2002-2015) on TTP/TMA in our center.
Case Report. First case; A 48-year old male was admitted with the diagnosis of myocardial infarction (MI). At the second day of admission he developed high fever (39 c), thrombocytopenia (45000). within the next two days, platelet count draped to 20000/µL, hemoglobin to 7.5 mg/dL, and LDH; 2500 IU/mL, Leukocytosis; 20000 /µL, indirect bilirubin; 2.4 mg/dL, direct; 1 mg/dL, serum cretaining ; 2.3 mg/dL. Peripheral blood smear revealed schistocytes at least 5-7 in each powered filed. While patients were taking his cardiologic medicine. Severity of thrombocytopenia was impedance for coronary angiography and possible revascularization. With the diagnosis of TTP plasma exchange was started with FFP replacement after 3 days, platelet counts increase to 80000 /mL, and serum retaining dropped to 1.7 mg/dL. Two months after the MI, blood samples were taken for ADAMTS-13 activity measurement that showed a lower than five percent (< 5%) activity. second case; a 60-year old male developed TMA within a few days of myocardial and complicated his diagnostic p0roceidsures. In these patients, we also observed a low level of ADAMTS-13 (< 5%).
Conclusions. In both cases, we hypothesized that myocardial infarction as a source of a big inflammation in the context of underlying ADAMTS-13 deficiency could lead to endothelial damage and TMA /TTP development. Consideration of this rare combination helps the clinicians to approach the problem properly.

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Fenugreek (TrigonellaFoenum-Graecum) Induced Acute Interstitial Nephritis and Hemolytic Anemia

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Introductions. Herbal medicine has grabbed the public interest and there is a general belief of their safety and life compatibility, but there are a growing number of reported side effects. Fenugreek (Trigonellafoenum-graecum) is a frequently used herb as a dried vegetable in cooking and also as an herbal remedy.
Case Report. A 62-year-old woman developed acute renal failure and severe anemia and cholestatic hepatic involvement three weeks after daily ingestion of heat extract of fenugreek two or three times daily. Histologic study of renal biopsy revealed interstitial nephritis (AIN). Positive indirect combs study was compatible with autoimmune hemolytic anemia (AIHA),and elevated alkalan phosphatase and direct bilirubin were compatible with cholestasis. The patient's renal and hematologic condition were improved after fenugreek discontinuation and short period of corticosteroid treatment. Fenugreek contains high amount of flavonoid and flavonoid-induced AIN and AIHA could be the reason of this patient's presentation.
Conclusions. Herbal induced interstitial nephritis is a growing trouble and should be considered in the differential diagnosis of acute and chronic renal involvement. The risk could be increased if patients received high amount of a herbal product in a short period of time in this condition both

toxic and immunogenic picture could happens simultaneously.

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Pruritus and Insomnia in Hemodialysis Patients, Association with SF36 Quality of Life and Clinical Outcomes

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Introductions. Pruritus involves many hemodialysis (HD) patients and has close association with sleep quality and health related quality of life.
Methods. Pruritus and sleep problems data were obtained in 416 HD patients from nine dialysis facilities in September 2012. SF36 quality of life and a comprehensive questionnaire was provided for the patients. Patients were followed for a median of 28 months. Unadjusted and adjusted Odds ratio (AOR) of having pruritus/sleep disturbances for different variables and Relative risk of death was calculated.
Results. Moderate to extreme pruritus and insomnia was respectively identified in 38% and 49% of HD patients. Independent predictors of having severe to extreme pruritus were hyperphosphatemia (mg/dl) (AOR: 1.34; 95% CI: 1.06-1.70), anemia (g/dl) (AOR: 1.27; 95% CI: 1.04-1.56), and older age (year) (AOR: 1.02; 95% CI: 1.00-1.04). These predictors for severe to extreme insomnia were dialysis vintage (year) (AOR: 1.14; 95% CI: 1.04-1.26), worse bodily pain (AOR: 1.01; 95% CI: 1.00-1.03), poor mental health (AOR: 1.02; 95% CI: 1.01-1.04), and severe to extreme pruritus (AOR: 8.80; 95% CI: 3.24-23.91). SF36 quality of life was becoming significantly lower with increasing the degree of pruritus/ insomnia. Likewise, hospitalization was more common in these patients. During the follow up 123 (29.6%) patients passed away. The full-adjusted Relative Risk of death for extreme insomnia was 1.72 (95% CI: 1.00-3.03; $P = 0.05$).
Conclusions. Moderate to extreme pruritus/ insomnia are quite common in HD patients and significantly affect quality of life. Pruritus is great predictor of insomnia. Extreme insomnia is independent predictor of death.

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Assessment of Relationship Between Serum Magnesium and Bio-Electrical Impedance Variables in Patients Undergoing Peritoneal Dialysis

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Introductions. Magnesium plays an important role in normal cell function. Therefore, in this study the relationship between s magnesium and bio-electrical impedance variables (which is a method of determining body composition), in peritoneal dialysis patients are studied.
Methods. The bio-impedance variables were calculated by the device in 34 patients with peritoneal dialysis after dialysis fluid exit, using an impedance device. Impedance parameters including body fat percent, total body water (TBW),intra and extra cellular water (ICW and ECW) and ECW/ ICW and phase angle were measured. Magnesium and other biochemical variables were measured on 3 ml of blood from the brachial vein of intact arm. Pearson`s correlation analysis was used for determining correlation between variables.
Results. There was no significant statistical correlation between serum magnesium level and phase angle, lean body mass, body fat, whole body water, intracellular water, extracellular water, body cellular mass, extracellular mass but according to the pearsons correlation coefficient, there was significant statistical correlation between serum magnesium level and extracellular water, intracellular water and extracellular water ratio (in percent) in peritoneal dialysis patients.
Conclusions. In this study, there was a significant relationship between serum magnesium levels and intra and extravascular water content in peritoneal dialysis patients, but in these patients; there was no relationship between serum magnesium levels and the phase angle.

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A Comprehensive Evaluation of Gastrointestinal Disorders Among

Hemodialysis Patients, Evidence from a Matched Case Control Study

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Introductions. Gastrointestinal (GI) symptoms are prevalent in end stage renal disorder (ESRD) patients. The aim of the current study was to compare the prevalence of GI disorders in hemodialysis patients and a representative sample of Iranian healthy subjects emphasizing the effect of psychological symptoms in a matched case-control study.
Methods. A study on 597 hemodialysis patients and 740 age- and sex- matched healthy controls was undertaken in Isfahan province, Iran. GI disorders was examined using Rome III questionnaire. All subjects were asked to fill a 12-item general health questionnaire (12-GHQ) and hospital anxiety and depression questionnaire (HADS) to assess psychological symptoms. Multiple logistic regression was used to determine the relationship between GI disorders and hemodialysis in crude and adjusted models for controlling the confounding effect of psychological symptoms.
Results. The prevalence of irritable bowel syndrome (IBS) (32.2 vs. 21.2%, OR = 1.75; 95% CI: 1.41-2.19), gastroesophaseal reflux disease (GERD) (37.9 vs. 28.1%, OR = 1.55; 95% CI: 1.16.2.09) and dyspepsia (32.9 vs. 16%, OR = 3.39; 95% CI: 2.71-4.24) was significantly higher in hemodialysis patients than healthy controls while no significant difference was found between case and control subjects in terms of constipation (20.6 vs. 22.7%, OR = 0.88, 95% CI: 0.69-1.12). Unexpectedly, bloating prevalence (14.6 vs. 18.7, OR = 0.74, 95% CI: 0.56-0.96) was significantly lower in case than control subjects. Results for dyspepsia and IBS but not for GERD remained significant after adjustment for psychological symptoms. Surprisingly, a significant relationship was observed between constipation and hemodialysis after adjustment for psychological symptoms.
Conclusions. Our results indicated that IBS, dyspepsia and GERD were more prevalent in hemodialysis patients than healthy controls. IBS and dyspepsia were positively related to hemodialysis and did not affect by psychological symptoms. However, psychological symptoms attenuated the relationship between GERD and hemodialysis.

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Pruritus-Reducing Effects of Omega-3 Fatty Acids in Hemodialysis Patients

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Introductions. Patients with end-stage renal disease (ESRD) suffer from many complaints, from which uremic pruritus is a common situation. In this report, we have explored the outcome of omega-3 supplementary intake for treatment of this bothering symptom.
Methods. This double-blind, crossover study was carried out in two dialysis centers in which 40 hemodialysis patients suffering from pruritus were randomly assigned to two groups of omega-3-placebo (group A) and placebo-omega-3 (group B). Patients in group A, consumed fish oil capsules (1 gram capsules three times a day) for 4 weeks and after a washout period, they took placebo for another 4 weeks. The same was performed in group B, but in the reverse order. Pruritus score and serum levels of prostaglandin E2 was recorded at the beginning and end of each treatment period.
Results. There was a statistically significant

reduction of pruritus score in patients who took omega-3 fatty acid supplement. The mean pruritus score was reduced by 1.72 in patients who took fish oil, compared to a decrease of 0.45 in the placebo group (p value = 0.03); but the changes in serum level of prostaglandin E2 was not statistically significant in either of the groups (P-values > 0.05). No significant side effects of omeg-3 consumption were observed.

Conclusions. This report contributes to the ongoing research for finding a promising treatment for uremic pruritus and our observations indicate that Omega-3 fatty acids (3 gram per day) have decreasing effects on this symptom. Also, there was no correlation between the level of prostaglandin E2 and the severity of pruritus in hemodialysis patients.

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Relationship Between Fetuin-A and Vascular or ValvularCalcification in Hemodialysis Patients

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Introductions. Vascular and valvularcalcification are the important risk factors for cardiovascular disease in patients with End Stage Kidney Disease (ESKD). It is assumed that deficiency of Fetuin A, as a calcification inhibitor, involves in vascular calcification. This study aimed to examine the relationship between serum Fetuin A and vascular and valvular calcification in a cohort of hemodialysis patients.

Methods. This cross-sectional study was conducted on 122 patients on maintenance hemodialysis of Hasheminejad Kidney Center in Tehran 2013. Blood samples were tested for lab parameters including Calcium (Ca), Phosphorus (P), parathyroid hormone (PTH), highly sensitive C reactive protein (hCRP), 25 OH Vitamin D3 level and Fetuin A. Doppler sonography was performed for assessment of intima-media thickness (IMT) and stenosis in carotid arteries. A stenosis of more than 50%, the presence of each of the items of hypoechoic plaque or calcification, or a mean IMT ≥ 0.8mm, were considered as evidence for vascular calcification. Calcification of cardiac valves or mitral annular calcification (MAC), studied by two-dimensional echocardiography, was considered as an evidence for cardiac valvular calcification. The presence of each of the two conditions was considered as cardiovascular calcification. Laboratory findings were compared between the two groups of patients with and without cardiovascular calcification and its predictors were determined.

Results. Of a total of 122 patients, 74 patients (61%) were male and the mean age was 58 ± 16 years. The most common causes of ESKD were diabetes (46%) . The median dialysis vintage was four years. Mean Fetuin-A level was 36.5 ± 6.9mg/dL. In 77 patients (63%) Fetuin-A was within the normal range (35-100 mg/dL) and in 45 patients (37%) it was lower than the normal range. Ninety- two patients (75%) had vascular calcification and 89 patients (73%) had valvular calcification. In 75 patients (62%) both types of calcification were observed. Totally 106 patients (87%) had cardiovascular calcification. The patients with cardiovascular calcification were older (38 ± 14yr vs. 61 ± 14yr, $P < 0.001$); more affected by diabetes melitus (13% vs. 54%, $P = 0.007$), and had a longer history of dialysis (median of 2 yr vs. 5 yr, $P = 0.006$). Concerning the laboratory test results, patients with calcification also had lower levels of creatinine (8.9 ± 2.8 mg/dL vs. 11.9 ± 3.1md/dL, $P < 0.001$) and higher levels of calcium (8.7 ± 0.7mg/dL vs. 8.4 ± 0.5mg/dL, $P = 0.026$). There was no quantitatively and qualitatively significant difference between the two groups in terms of Fetuin-A ($P = 0.101$ and $P = 0.956$, respectively). Logistic regression showed that each year of increase in age, each unit increase in calcium, and the presence of diabetes melitus increased the odds ratio of calcification by 1.1 times (OR = 1.1, CI 95% = 1.1- 1.2), 2.8 times (OR = 2.8, CI 95% = 1.1 to 7.6), and 7 times (OR = 7.4, CI 95% = 1.1- 47.4), respectively .

Conclusions. The findings of this study showed that 87% of our hemodialysis patients had either vascular or valvular calcification. In addition, age, calcium level, and diabetes were identified as the most important predictors of calcification. There was no significant difference between the two groups with and without calcification in terms of Fetuin A.

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Vascular Access Types Usage Duration and Mortality Through the First Year of Hemodialysis

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Introductions. No study has examined the mortality of hemodialysis (HD) patients based on the duration of use of different access types. In this study, we investigated mortality of HD patients based on how many month different access types had been used.
Methods. The data were collected from Shiraz University of Medical Sciences HD database. We used C5.0 algorithm to extract prediction rules of HD patients mortality through the first year of starting HD in 705 patients who initiated their first dialysis session between 2012 and 2014. Survival analysis was done by Cox model to assess the association of vascular access duration and mortality in unadjusted and adjusted models for confounders (age, sex, underlying etiology, anemia, dialyzer flux type, body mass index, the average blood pressures and pulse rates, HD adequacy in terms of kt/v, blood urea nitrogen, and serum albumin).
Results. Cox models showed significant associations between durations of access types usage and mortality after adjustment for the mentioned confounding variables. Hazard Ratio (HR) for mortality in three temporary central venous catheters (CVC) usage duration ranges (more than 9.2 months, between 5.4 and 9.2 months, between 4 and 5.4 months) in comparison to less than 4 months usages were 6.0 (95% confidence intervals [CI], 3.80 to 9.41), 2.4 (95% CI, 1.45 to 4.02), 2.3 (95% CI, 1.30 to 4.20) respectively in adjusted model. For mortality in three arteriovenous fistula (AVF) usages (below 2.8 months, between 2.8 and 6.6 months, between 6.6 and 8 months) in comparison to over 8 months, HR were 5.0 (95% CI, 3.20 to 8.00), 3.8 (95% CI, 2.10 to 6.90), 2.0 (95% CI, 1.01 to 4.30) respectively.
Conclusions. Our results showed that the total amount of time a particular type of access used for HD has a significant impact on mortality. Our findings recommend limiting the use of CVCs to less than 4 months.

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Generating Vast Number of Hypotheses Requires Having a Complete Hemodialysis Registry

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Introductions. All traditional disciplines in medicine rely heavily on statistical analysis for knowledge extraction. Nephrology is no exception. In this talk we will present power of new knowledge discovery techniques, a.k.a data mining, by having access to the detailed registry of patients. Regular statistical techniques start with a proper study design. As the number of features collected from patients increase, finding proper set of research hypotheses becomes more challenging. High quality research and possible law suits require detailed clinical information stored for a long period of time.
Methods. New knowledge discovery techniques make it possible to come up with the variety of new hypotheses that could not be feasible before. Those hypotheses can be used as a base for more rigorous statistical analysis later. By having a registry system different quality measures can be applied and increase the data quality throughout the life time of the system. In addition, data mining techniques such as rule extractions can be used on the collected data. As our joint collaboration, we collected detailed 2367 hemodialysis (HD) patients data from Shiraz University of Medical Sciences HD database in a period of three years. After completing our data collection methods, 705 patients who had a fairly complete set of results were selected.
Results. As a sample of our findings in the study several multi-factor rules were extracted in contrast to one factor. Different cut-off points were found that will be presented at the conference. For example serum albumin over 3 increases survival probability up to 83%, but if the albumin level is below 3 g/dl mortality is almost 72%. If hemoglobin was over 8.08 g/dl then survival probability was 81% but below this range, the probability decreases to 42%.
Conclusions. To coming up with new hypotheses, the access to a large amount of accurate data for a long period of time is necessary which makes the nephrology registry a must.

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Temporal Patterns in Knowledge Discovery of Hemodialysis Patients' Data

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Introductions. Hospitalization rate in hemodialysis patients is high. Due to high economic burden for patients and health industry, preventive medicine can lead to better results. Knowledge discovery is the process of automated search through data for finding patterns that can be helped physicians to make timely decisions and diagnosis. Patients' data contain a wide variety of time-stamped events that consider as the basis for temporal pattern discovery, this study aimed to model temporal patterns for predicting hospitalization of hemodialysis (HD) patient.
Methods. In this retrospective study, 128 patients who were on regular HD for at least one year (2012-2013), we gathered biomedical and non-biomedical features during 12 months and followed patients for 3 more months to determine the hospitalization status. Features included 34 items such as Age, Gender, Hypertension, Albumin, Creatinine, BUN, Ca *P, Kt/v, etc. gathered from Shiraz University of Medical Sciences hemodialysis centers. Temporal abstraction technique used for pattern discovery which determined trend and state changes of patients' data by Low, Normal, High and majority of these states. As Knowledge discovery tools we used WEKA 3.7.9 and IBM SPSS Modeler 12.
Results. Through PART and Apriori algorithms; after discussions with the experts, the most reliable and clinically accurate rules were reported. The output revealed Kt/v as an important factor, For instances one rule indicated that Patients who are not diabetic and hypertensive and a stable level of normal value of Kt/v are predicted as non-hospitalized cases by 85% confidence. The other rule showed stable level of low value of MCV, HCT and HB are predicted hospitalized by 83% confidence.
Conclusions. The results demonstrated that temporal patterns can help physician to understand and predict the hospitalization of HD patients. In this study medical data analysis includes data gathering, preprocessing, results evaluation, and discussion with clinicians which represents the knowledge-based pattern for time series data of hemodialysis patients.

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Serum Leptin Levels in Hemodialysis Patients, Are There any Correlations?

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Introductions. Leptin has recently received much attention in end stage renal disease (ESRD) patients. One of the most cited adipokines, high leptin levels has been correlated with metabolic syndrome and cardiovascular mortality in general population. Nevertheless, data are conflicting regarding its precise correlation with inflammatory biomarkers, malnutrition and other metabolic derangements in hemodialysis patients. The aim of this study was to investigate the presence of these relations.
Methods. We conducted a cross-sectional study on 79 ESRD patients aging over 18 years and receiving hemodialysis thrice a week for at least three consecutive months. Leptin, interleukin-6, highly sensitive CRP, total cholesterol (Chol.), LDL, HDL, triglycerides (TG), PTH, albumin (Alb), Calcium (Ca), Phospate (Ph), Uric acid (Uric a.), hemoglobin, ferritin, TIBC, total weekly Erythropoietin need (EPO), Malnutrition Inflammation Score (MIS), body weight, hight and Body Mass Index (BMI) were checked. The statistical analysis was performed using SPSS software (version 23). Pearson correlation coefficient was used as the measure of linear dependence.
Results. The studys data (mean values ± standard deviation) was as follows: Weight: 64.13 ± 14.97, Age: 57.89 ± 16.49, IL-6:100.69 ± 66.24, Leptin: 25.00 ± 12.71, CRP: 136.19 ± 386.77, Hb: 11.55 ± 1.95, EPO: 9417.72 ± 8128.15, TIBC : 315.34 ± 147.30, Ferritin: 671.20 ± 637.73, Chol: 133.93 ± 35.40, TG: 105.05 ± 47.53, LDL: 58.56 ± 26.17, PTH:

545.41 ± 412.17, Alb: 3.97 ± 0.38, Ca: 8.36 ± 0.91, Ph: 5.47 ± 1.29, Uric a.: 7.9823 ± 1.39, BMI: 23.65 ± 5.08, MIS : 4.44 ± 2.32. We did not find any correlations between leptin and other parameters.

Conclusions. Although leptin levels are much higher than normal in hemodialysis patients, it seems that leptin is not correlated with IL-6, hs-CRP, anemia or malnutrition.

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The Effect of Pomegranate Extract on Inflamatory Biomarkers and Nutritional Status of Hemodialysis Patients

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Introductions. Inflammation is an inevitable part in pathophysiology of complications of end-stage renal disease. Among all inflammatory cytokines, interleukin-6 (IL-6) and C-reactive protein (CRP) are well-known for their best clinical correlation. The aim of this study was to see whether pomegranate juice would significantly reduce levels of inflammatory markers and/or improve malnutrition.

Methods. The study took place in two university-based hemodialysis centers. All eligible ESRD patients aging over 18 years and receiving hemodialysis thrice a week for at least three consecutive months were asked to take part in the study. 79 eligible patients signed the informed consent and 51 participants completed the trial to the end. The study was double blinded and placebo controlled. The participants were randomly allocated to two groups. They received 2g of pomegranate extract one hour before the start of their dialysis session (three times a week) versus placebo for 8 weeks. Before and after the completion of the intervention, interleukin-6, leptin and CRP were checked in blood samples of participants. Nutritional status was evaluated by malnutrition Inflammation Score (MIS). The statistical analysis was performed using SPSS software (version 23). A P value of less than 0.05 was considered significant.

Results. Decreases in interleukin-6 (39.31 in pomegranate extract groups versus 15.66 in placebo group) and MIS (0.72 in pomegranate extract group versus 0.53 in placebo group) were statistically significant (p value = 0.035 and 0.016 respectively. Differences between other pre- and post- data were not statistically significant. These include differences in leptin, highly sensitive CRP, lipid profile, PTH, hemoglobin and total weekly Erythropoietin analogue need, calcium and phosphorus as well as weight and BMI.

Conclusions. Short-term use of pomegranate extract would effectively decrease interleukin-6 and Malnutrition Inflammation Score (MIS). Changes in hsCRP and leptin were not statistically significant in our study.

P 113

Effect of Hydrochlorothiazide and Spironolactone on Reducing Proteinuria Among Patients with Diabetic Nephropathy Treated by Angiotensin Converting Enzyme Inhibitors

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Introductions. Diabetic nephropathy is one of the leading causes of the end stage renal disease (ESRD) in all over the world. Overriding of renin-angiotensin-aldosterone system (RAAS) is considered as one of the important mechanisms of renal damage among diabetic patients. Treatment with RAAS inhibitor drugs, angiotensin converting enzyme inhibitors and angiotensin receptor blockers (ACEIs and ARBs) reduces the rate of renal involvement and consequently progression of diabetic nephropathy toward ESRD. The aim of this study was comparison of anti-proteinuric effects of Hydrochlorothiazide (HCTZ) with Spironolactone in patients with diabetic nephropathy who were treated with ACEIs.

Methods. In a randomized clinical trial in Sheikh-ol-raies university clinic, 90 hypertensive diabetic patients who were receiving Enalapril because of diabetic nephropathy underwent combination treatment with HCTZ and Spironolactone as two different groups. Teir urine albumin,blood pressure and serum potassium were compared.

Results. Urine albumin decreased from 1342 ± 927 mg/day at the beginning of the study, to 1093 ± 814 mg/day among HCTZ group, and from 1183 ± 916 mg/day to 955 ± 786 mg/day in spironolactone group. but these differences was not statistically significant (P = 0.9). Furthermore systolic blood pressure (SBP) decreased from 145 ± 15 to 135 ± 16 mmHg in HCTZ group and from 151 ± 12 to 145 ± 16 mmHg among Spironolactone group. In HCTZ group SBP decreased more significantly (P = 0.022). Among Spironolactone receivers, serum potassium increased significantly. This difference was statistically significant (P = 0.007).
Conclusions. In our study, there were no statistically significant differences in decreasing albuminuria or reducing blood pressure between these two groups but, because HCTZ did not cause any hyperkalemia, combination of ACEIs with HCTZ is preferable.

P 114

Prevalence of Non-Diabetic Kidney Disease Among Patients with Diabetes Mellitus

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Introductions. Diabetic patients include a high percent of general Population. In these patients the most known kidney disease is Diabetic Nephropathy, however empirically in clinics most of them have other kidney Problems. In order to avoid big mistakes in diagnosing Diabetic Nephropathy and importance of subject this study was done.
Methods. In a cross-sectional study using patients who had kidney biopsy because of absent retinopathy, neuropathy, or other complications not compatible with diabetic nephropathy coarse, during 7 years, from 1387-1393. The patients were divided into 3 groups (according to kidney biopsy) group A, just had non-diabetic kidney disease. Group B, had both diabetic and non-diabetic kidney disease. Group C, just had Diabetic Nephropathy. Finally, the demographic and descriptive statistic results were discussed.
Results. 71 patients were enrolled. The average time of having diabetes was 8.83 ± 2.87 years and 80.3 percent had history of hypertension. In pathologic reviews in 62% the changes were due to diabetes and in 21.12% the membranous glomerulonephritis was seen. Data analysis showed that there is meaningful relation between sex and pathology P = 0.001 but such relation was not seem between duration of having diabetes and proteinuria (P = 0.779) and hypertension and protein exertion (P = 0.087) and also the duration of having diabetes and creatinine level (P = 0.779).
Conclusions. Results of this study showed that high percent of diabetic patients are suffering from non-diabetic renal complications; therefore attention to non-diabetic kidney disease is very important in exact diagnosis and treatment of their problems, because sometimes it will be so difficult separating of them.

P 115

The Review Investigation of Cardiovascular Events and Its Effect on Mortality Rate in Patient with ESRD

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Introductions. End-stage kidney disease is also called end-stage renal disease (ESRD) is the last stage of chronic kidney disease. This is when your kidneys can no longer support your bodys needs. The reported cardiovascular death rates in patients receiving dialysis are substantially higher than in the general population and cardiovascular disease accounts for more than 50% of ESRD deaths. Given the importance of this issue and challenges in the relationship between advanced kidney disease and heart disease risk in previous studies Additional studies regarding the relationship between the two mentioned diseases is essential and our aim is to determine association between kidney disease and heart disease risk exactly by review of related previous studies.
Methods. Published papers from 2007 to 2016 with higher Citation in the area of ESRD and the incidence of cardiovascular problems and deaths caused by Cardiovascular Events were studied and generally the relationship between ESRD and Cardiovascular Events using statistical tests to all patients in these studies were examined. Furthermore, the effect of

Intervening factors such as gender, age, smoking and diabetes were investigated.
Results. This review explores the influences of cardiovascular diseases on survival in patients with end-stage renal disease treated with dialysis. The findings show that the Cardiovascular Events is a very strong risk factor for ESRD and death in patients with chronic kidney disease (CKD) over dialysis.
Conclusions. An independent, graded association was observed between the risk of death in ESRD patients and cardiovascular events.

P 116

Main Determinants of Tunneled Cuffed Catheters (TCC) Infection in Hemodialysis Patients

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Introductions. Despite all efforts to prevent Tunneled-cuffed catheters (TCC) infection or its treatment appropriately, the incidence of this infection has remained considerably high. The present study aimed to exclusively assess risk determinants affecting TCC infection in hemodialysis patients.
Methods. This case-control study was performed on 165 consecutive patients as known cases of end-stage renal disease on maintenance hemodialysis through double-lumen-TCC. The patients were assigned into two groups as the case group with the clinical evidences of TCC infection and the control group with noninfectious statement.
Results. In the group with TCC infection, the most common microorganisms cultured in the medium included staphylococcus aurous and staphylococcus epidermitis with the overall prevalence of 17.6% and 15.3% in blue lumen and 14.1% and 14.1% in red lumen, respectively. Overall, 75.3% of the lumens were positive for infection, while 52.9% of blood cultures were positive. Multivariable logistic regression modeling showed that female gender, insertion catheter via jugular vein, higher CRP level, lower serum iron level, and higher serum ferritin level could predict TCC infection in dialysis patients. According to ROC curve analysis, measuring CRP level, serum iron and serum ferritin could effectively discriminate TCC infection from noninfectious statement; CRP > 16, ferritin > 200 and serum iron < 40 could predict TCC infection.
Conclusions. About 75% of samples extracted from catheter lumens are positive for TCC infection. The main determinants of TCC infection include female gender, insertion catheter via jugular vein, higher CRP level, lower serum iron level, and higher serum ferritin level.

P 117

Early Tacrolimus Induced Encephalopathy, a Case Report

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Introductions. Neurotoxicity due to CNI (calcineurin inhibitor: ciclosporin, tacrolimus)are common after organ transplantation and associated with significant morbidity and mortality. The frequency of CNI neurotoxicity among solid organ transplant is 20% to 40% but the incidence of tacrolimus associated Posterior Reversible Encephalopathy Syndrome (PRES) after solid organ transplant is 0.49%. Early identification of drug induced neurotoxicity in transplanted patient and specific cause is important. We report a patient who presented with early neurotoxicity (24 hours) after initiation of tacrolimus.
Case Report. A 45 year- old woman who had undergone kidney transplantation 24 hours ago, complained blurred vision and severe headache that didn't respond to analgesic drugs. The patient's blood pressure had been elevated 160/90 mg. She was given tacrolimus,prednisone,myco phenolate, Anti-thymocyte globulin. Neurologic examination revealed subjective Homonymous hemianopsiawhitout focal deficit. Tacrolimus trough level was 8.1 ng/ml (therapeutic level 5-15 ng/ml), that was within target range. Other laboratory tests and Brain Magnetic resonance imaging (MRI) were normal. There wasn't any evidence of infections, metabolic and neoplastic diseases. Diagnosis of PRES was made by clinical finding. Tacrolimus was withdrawn two days after administration

and replaced by ciclosporin. Clinical symptoms were resolved four days after discontinuation of Tacrolimus. PRES is characterized by clinical findings such as headache, mental status changes, seizure, visual abnormality and focal neurological deficits coupled with finding on brain imaging. But in our patient, absence of characteristic finding of Leukoencephalopathy on MRI didn't exclude the diagnose of tacrolimus associated PRES. Treatment and prognosis PRES are highly dependent on it's early recognition. Reduction or discontinuation of medication known to cause PRES prevent neurological deficit.

Conclusions. Tacrolimus neurotoxicity should be considered as an important cause of neurologic manifestation in transplanted patient.

P 118

First Report on Percentiles of GFR in Iranian Children Using 2009 Schwartz Equations

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Introductions. Glomerular filtration rate (GFR) is widely considered as the best overall index of kidney function. The Schwartz equations are designed for GFR measuring in children between 1 and 16 years of age. In this study, we investigated the percentiles of glomerular filtration rate (GFR) in general Iranian children with no known renal disease using 2009 Schwartz equations (the updated and the combined equation).

Methods. Between 2010 and 2011, 687 children aged 7-16 years were selected from Isfahan province of Iran by random cluster sampling. Blood samples were analyzed for blood urea nitrogen, creatinine and cystatin C. For each child, we calculated GFR using two Schwartz equations.

Results. The median of age was 12 years. The mean GFR was 100.06 ± 19.80 ml/min/1.73 m^2 based on the updated equation and 96.10 ± 18.44 ml/min/1.73 m^2 based on the combined equation. We determined the age- and gender-specific 5th, 25th, 50th, 75th and 95th percentiles of GFR values based on each equation.

Conclusions. This is the first study on GFR percentiles in Iranian children. The knowledge on GFR percentiles may be of interest to pediatricians in evaluating renal function of the children.

P 119

Differences Between Primary and Familial Focal Segmental Glomerulosclerosis in Children

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Introductions. Focal segmental glomerulosclerosis (FSGS) is a type of nephrotic syndrome that is associated with heavy proteinuria, hematuria and hypertension. FSGS can be divided into primary (idiopathic), secondary and familial forms. The patients with FSGS, commonly progress to end stage renal disease (ESRD). The aim of this study was to investigate the differences between primary and familial forms of FSGS in children.

Methods. Forty-six patients less than 16 years of age who had biopsy proven FSGS were recruited. For defining the type of FSGS, pedigrees of the subjects were drawn by interviewing and medical records reviewing of their parents and other family members. Then, demographic characteristics and clinical information of all patients were collected. In addition, the patients who had progressed to ESRD (defined as eGFR < 15ml/min per 1.73 m^2) were detected.

Results. Thirty-two patients were male (69.6%) and the male-female ratio was: 2.2:1. Twenty-four patients had familial form of FSGS (52.2%). The mean age at first presentation was: 6.72 ± 3.49 (range 1-15.5) years. 36 patients (78.2%) had normal eGFR (eGFR > 60ml/min per 1.73 m^2) and 10 patients (21.7%) had progressed to ESRD of whom 7 had familial FSGS. In comparison of primary and familial form of FSGS the risk of hematuria (OR,4.25; 95% CI, 1.23-14.63) and the level of 24-hour urine protein were significantly higher in patients with familial FSGS. Although, the risk of ESRD in patients with familial FSGS was higher (OR,2.6; 95% CI, 0.58-11.71) than patients with primary FSGS, it did not reach a statistically significant threshold. In addition, the differences of other clinical features were not significant

between two groups.
Conclusions. In this study, we demonstrated that the risk of hematuria and 24-hour urine protein level were significantly higher in patients with familial FSGS, however the clinical outcome was not significantly different among primary and familial FSGS patients.

P 120

Prevalence of Obsessive-Compulsive Disorder in Pediatric and Adolescent Patients with Chronic Kidney Disease

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Introductions. Chronic Kidney Disease (CKD) is defined as renal injury and/or a glomerular filtration rate below 60mL/min/1.73 m^2 for more than 3 months. Neurologic symptoms in CKD include fatigue, poor concentration, headache, drowsiness, memory loss, seizures, and peripheral neuropathy. Obsessive-Compulsive Disorder (OCD) is a chronic disabling illness characterized by repetitive, ritualistic behaviors over which the patients have little or no control. Common obsessions include contamination and thoughts of harming loved ones or oneself. Washing and cleaning compulsions are common in children, as is checking. The purpose of this study was to investigate the relationship between OCD and CKD
Methods. In this case-control study, we evaluated 186 children aged 6-17 years old who were visited in the pediatric clinics of Amir-Kabir Hospital, Arak, Iran. The control group consisted of 93 healthy children and the case group included 93 age and sex matched children with stage 1 to 3 CKD. Then, the children's behavioral status was evaluated using the Children's Yale-Brown Obsessive-Compulsive Scale (C-YBOCS). The C-YBOCS is helpful in identifying children with OCD. The data was analyzed using descriptive and analytical statistics in SPSS-16.
Results. Compulsion was detected in 31 cases (33.3%) with CKD and 7 controls (7.5%), and obsession was found in 3 cases (3.2%) with CKD and 4 controls (4.3%). The difference in compulsion was significant (Pvalue = 0.021) while the difference in obsession was not significant between the 2 groups (p-value = 0.3). The most common symptom in CKD children with compulsion was silent repetition of words.
Conclusions. Compulsion is more common in CKD versus non-CKD children. The observed correlation between compulsion and CKD makes psychological counseling mandatory in children with CKD.

P 121

Risk Factors of Severe Peritoneal Sclerosis in Chronic Peritoneal Dialysis Patients

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Introductions. Chronic Kidney disease is major health issues that might lead to End Stage Renal Disease in which patients need renal replacement therapy in order to survive. Peritoneal dialysis offers the healthiest way for starting renal replacement therapy, however exposes long term Peritoneal dialysis patients to a dangerous high mortality complication named Encapsulating peritoneal sclerosis.
Methods. In this study, we searched for possible risk factors of Encapsulating peritoneal sclerosis. Data were collected from two Peritoneal dialysis centers covering period 1995 to 2012 and comprised 464 patients. Control group defined as Peritoneal dialysis patients stayed on Peritoneal dialysis > 42 month (n = 122), and case group was 12 confirmed Encapsulating peritoneal sclerosis patients. Associations were analyzed using linear regression analysis.
Results. Prevalence and incidence of Encapsulating peritoneal sclerosis were 2.59% and 8.9% with an

incidence of 0.7% patient-years, respectively. The age at start of Peritoneal dialysis in Encapsulating peritoneal sclerosis patients (32.75 ± 10.8 year) was significantly lower compared with control group (49.61 ± 16.18 year, $P = 0.0001$). The mean duration of Peritoneal dialysis in Encapsulating peritoneal sclerosis and control group were 2494.4 ± 940.9 and 1890.2 ± 598.8 days ($P = 0.002$). Control group had 145 episodes of peritonitis during total duration of 7686 patient months (peritonitis rate of 1/53). This was 1/26 with a total 38 episodes of peritonitis during the total duration of 997 patient months ($P = 0.01$) for Encapsulating peritoneal sclerosis group. In regression analysis, Peritoneal dialysis duration, age at Peritoneal dialysis start and duration of Ultrafiltration failure were associated with Encapsulating peritoneal sclerosis.

Conclusions. Longer time being on Peritoneal dialysis, younger age, and higher Ultrafiltration failure duration were the risk factors for Encapsulating peritoneal sclerosis development.

P 122

External Iliac Artery PseudoaneurysmEarly After Renal Transplantation, a Case Report

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Introductions. Kidney transplantation is one of the best way of renal replacement therapy. But a lot of common and uncommon dangers threaten patient and allograft kidney. (1) Vascular complication after a kidney transplant are potentially life and limb-threatening. This case is an unusual presentation of a rare condition. (2).

Case Report. A 53 years old man received a cadaveric renal allograft because of ESRD due to ADPKD. His treatment was an immunosuppressive regimen of ATG (anti thymocyte globulin) and corticosteroid as induction therapy and his maintenance medications were cellcept, tacrolimus,prednisolon. He had no transplant surgery complication and his general condition, urine output and graft function were good until more than one week . After that, anemia, thrombocytopenia,LDH rising, increasing in serum creatinine level and decreasing in urine output which occurred simultaneously in the second week after transplantation, all conducted us to do plasma exchange and it started in 10th day post transplantation. After no response to plasma exchange and aggravation in patients clinical condition and kidney function, we did renal artery and vein color Doppler sonography, and after confirmation diagnosis of thrombosis in renal artery, nephrectomy was done . after that, hemodialysis for renal replacement therapy was begin. Because of unilateral increasing right lower extremity edema and pain and erythema of affected limb,and normality of soft tissue and arterial and venous flow in sonography and color Doppler imaging,with clinical suspicion of pseudo aneurism, CT angiography was done. At anatomic location of right iliacus muscle two areas measuring approximately 50*20 mm and 45*30 mm in favor of pseudo aneurysm formation and disruption of a part of this artery was seen. endovascular repair was done successfully . Blood loss and decrease in platelet count stopped and lower extremity edema and pain resolved to some extent .

Conclusions. Intra renal and extra renal pseudo aneurysms are uncommon and involve different etiologies and prognosis. (2) External iliac artery pseudo aneurysms following renal transplantation are uncommon, with an incidence rate of < 1%. (3) patients with false aneurysms after their renal transplant are usually asymptomatic and they are diagnosed as an incidental finding. In most cases there are no identifiable physical finding specific to these false aneurysms. Few cases present with fever, anemia, compression of adjacent structures, hypertension,functional impairment,graft loss and life threatening hemorrhage due acute rupture. Early detection and prompt surgical or radiological intervention of these complications can salvage most of such renal allograft . (10) In our patient, the pseudo-aneurysm was diagnosed around three weeks after transplantation and content of the pseudo aneurysm did not reveal any signs of mycotic or bacterial infection . the pseudo aneurysm involved external iliac artery that result to disruption and large hematoma, severe anemia,and compression of adjacent structures, decrease in

venous return of lower extremity veins . so after vascular surgery consult,we decided endovascular repair of it. In conclusion, pseudo aneurysm of the external iliac artery is a rare but life threatening. Early diagnosis with sonographic imaging and CT scan may allow for a definitive treatment.

PS 123

Long Term Follow Up of Patients Performed Enterocystoplasty and Ureterocystoplasty Before Kidney Transplantation, A Single Center Experience

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Introductions. Augmentation cystoplasty either with the use of an intestinal segment (enterocystoplasty: EC) or dilated ureter (ureterocystoplasty: UC) before or after renal transplantation is an option for patients with end-stage renal disease who are candidates for renal transplantation and have low capacity and poorly compliant bladders. The aim of this study is to compare these two methods of augmentation before kidney transplantation and their long-term outcome in kidney recipients with bladder dysfunction.

Methods. During a 27-year period (1988–2015), 2450 renal transplantation were performed in our center by a fixed team. In 27 patients (group A) with mean age of 19.5 years, EC and in 16 (group B) with mean age of 10.2 years, UC were performed before renal transplantation. These two groups were compared according to their kidney functions, graft and patient survivals, mortality and morbidity, and the frequency of urinary tract infections (UTI).

Results. There was normal graft function in 19 of group A and 12 of group B during a mean follow-up of 125 months. The mean serum creatinine in the follow-up was 1.85 ± 0.21, 1.41 ± 0.12 in groups A and B, respectively. Number of episodes of febrile UTI requiring hospitalization was 37 and 9 in groups A and B, respectively. UTI and urosepsis were significantly more frequent in group A than groups B ($P < 0.05$). Graft loss was seen in 8 patients of group A (5 due to chronic rejection and 3 of recurrent pyelonephritis) and 4 of group B (all due to chronic rejection). Eleven patients of group A but one patient in group B required clean intermittent catheterization (CIC) for bladder emptying. Bladder complications were seen in 5 patients of group A (pyocystitis in 2 and bladder stone in 3 cases) and 2 patients of group B (cystitis cystica). Two patients of group A were died, one due to cardiovascular problems and the other due to urosepsis. Also one patient in group B was died due to cardiovascular problems. No statistically significant differences were observed among the two studied groups in terms of 1, 5, 10 and 15 year patient survivals.

Conclusions. Although both EC and UC are recommended before renal transplantation for reconstruction of the lower urinary tract but UC had lower complication rates and also the quality of life was better in this method of treatment. Use of each method should be individualized depending on specific conditions of recipients.

P 124

Challenges in Lung Transplantation in Iran

Davari Hamidreza

Introductions. Lung transplantation is the treatment of choice for end stage lung disease for more than 2 decades. It is a clinical practice with 3651 lung transplantation in more than 225 center registered lung in 2015. How about IRAN and why we are still disappointed.

Methods. As a general thoracic surgeon who have been interested in lung transplantation since 1993 when I started thoracic fellowship, I would like to discuss major challenging issues and little progress in lung transplant program in Iran. I participated in first bilateral lobar living transplant and first heart and lung transplant in Shiraz university before fellowship in lung transplantation. I was a member of team for kidney and liver for six years before lung transplant training. I was a surgeon and conducted first bilateral lung transplant in Shiraz. I moved to capital and as a senior surgeon I did 21 lung transplantation but still I am disappointed for little progress and not well organized program. I would like to discuss these issues in round table.

Results. In our country kidney transplantation has

been done for 2 decades and liver transplantation for one decade for annual 3000 kidneys and 500 liver transplantation per year. Thoracic transplantation has been done for more than a decade with up to 600 hundred heart and more than 100 lung transplantations. The main issue is why we are not having an active and continuing program. We had 1st lung transplantation in Iran who is still alive for 14 years and is on waiting list for second lung transplantation, Since the beginning lung transplantation we had more than 80 lung transplantation in one center and 20 in other center with at least 3 center did 1 to 2 lung transplantation. Are there a problem in technique, instrument, team work, or training.? We started lung transplant program as compare with kidney and liver transplant with less training team and in a substandard situation. There are local and government issues such as organization, instruments, training of all members of team, team work, leadership and socioeconomic support of team and lung transplant candidate.

Conclusions. Each country needs native program but it is necessary to understand lung transplantation is a special fellowship needs training not for surgeon but for all members of team. Thoracic surgery ward needs to be standardized. We need to close cooperation with international societies and academic center to get their experience. It is our fault to have little progress in lung transplant and not the complexity of lung transplantation.

P 125

Rapid Growth of Iran Deceased Organ Donation Program

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Introductions. Deceased donors per million population (pmp) is a good measure for evaluating the status of deceased organ donation in every country. Spain has been showing the highest rate of deceased donor organ recovery in the world for a whole country, namely, 33-35 donors pmp during the last years.

Methods. In this study, we review the major factors that have the greatest effects on the rapid growth of deceased donor pmp in Iran.

Results. Deceased donor pmp in Iran has had progressive growth in last decade. In 2006, deceased donor pmp was 1.8. Significant efforts were done in last decade for increasing the deceased donor pmp . In 2016 pmp of Iran was 16.3.

Conclusions. High cultural background and literate population (> 90%) of Iran with approval of deceased organ donation by religious leaders are the major factors for rapid rising of deceased donor pmp in Iran.

P 126

Long-term Outcome After Sternochondral Allograft for Anterior Chest Wall Reconstruction

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Introductions. Reconstruction of sternum after wide resection for anterior chest wall tumour and large bone loss after deep sternal wound infection post cardiac surgery are mandatory. A search for the ideal material for chest wall reconstruction continues to challenge thoracic surgeons. Here is our long-term outcome of bone allograft for sternal reconstruction.

Methods. Between January 2012 and August 2015; 4 cases with sternal tumour including: synovial cell sarcoma, myxoid tumour, fibrous tumour and chondroma, and 2 with post cardiac surgery sternal wound infection were reconstructed with bone allograft. After full evaluation and obtaining consent for bone allograft, the patients were put on the list for an allograft from a beating-heart donor. Sternum was used after processing by serial culture, freezing and sterilised with Ethylene Oxide. Allograft was fixed with locking Titanium microfixation in 4 and 2 without locking screw.

Bilateral pectoralis major muscle flaps were used to cover the grafts.

Results. The operations were uneventful. First patient with BMI = 40; developed infection in deep soft tissue and breast. Her wound was managed with water jet hydrotherapy technique and negative pressure wound therapy with the allograft left in place. CT scan 6 months - 4 years after operation were reported normal with some area of vacuolisation and decreased mineralisation to dislodgement of screws in a few patients. The last patient had persistent seroma formation and within 9 months she had 2 operations; the first for refixation of allograft to both clavicles because of dislodgement and bone resorption and the second for persistent seroma with partial lower allograft instability. Two obese patients with allograft post CABG died 35 - 45 days post op with cardiac cause.

Conclusions. This technique hails a new era in anterior chest wall reconstruction which provides good functional and cosmetic results. It is recommended to monitor the healing process by SPECT/CT scan rather than CT scan and reconstruction. Allograft procurement, body size match, and limitation in donation are major issues.

P 127

Is It Possible to Preserve the Blood Supply of Erectile Organs with Anastomosing Hypogasteric Artery in Renal Transplantation?

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Introductions. Three modalities available for treatment of chronic renal failure are peritoneal dialysis, hemodialysis, and kidney transplantation, from all of them kidney Trans plantation is cost benefit and also associates with near normal lifestyle in patients. In this approach, most often external iliac artery of the patients is selected for anastomosis but if anastomosis would be associate with complication, sometimes it could be a disaster event with loss of foot. Traditional approach for anastomosing renal artery to Internal iliac artery (end to end) may be associated with multiple pelvic organ ischemia, if in this approach end to end anastomosis will be replaced by end to side, it will be more safe than external iliac artery approach. We present some cases in which end to side anastomosis with internal iliac artery have been carried out.

Methods. In 10 cases with chronic renal failure (8 males 2 females age between 25-50) in them anastomosis of renal artery of allograft with internal iliac artery instead of end to end, end to side have been carried out.

Results. After de-clamping of vessels, all patients had diuresis and creatinine of them were in normal range and blood flow in branch of internal iliac artery by color Doppler was detectable.

Conclusions. In some chronic renal failure patients with large diameter of internal iliac artery end to side anastomosis may be possible and this approach is safer than external iliac artery end to side anastomosis.

P 128

A Descriptive Study of Orthotopic Liver Transplant Program in Montaserieh Organ Transplant Center, Mashhad Northeast Iran

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Introductions. Due to the increasing incidence of life-threatening hepatic disorders, connecting new liver transplant centers to currently unified organ transplant network is considered as an inevitable necessity within Iranian national clinical community. This study was directed to quantify our recently established liver transplant center performance over initial four years.

Methods. This cross-sectional descriptive study is a subset of a large data repository. Central tendency measures and statistical survival estimators were used to present outcomes of the first 124 consecutive deceased donor liver transplants performed at our center during the period of June 2013 to December

2016.
Results. The cohort included 85 males and 39 females (mean age 45.4 ± 14.9 years). Patients underwent liver transplantation mostly due to hepatitis B (n = 37, 29.8%), cryptogenic (n = 26, 21%), autoimmune (n = 22, 17.7%) and hepatitis C (n = 14, 11.3%) cirrhosis with model for end-stage liver disease score ranged from 11 to 36 (mean 18.8 ± 4.2). Biliary complications (n = 14) and post-operative hemorrhage (n = 5) were the main complications associated with post-transplant course. Three-month, 1-year, and 3-year patient survival rates were 91.9%, 90.0, and 85.3%, respectively.
Conclusions. The overall results were found to be comparable to those in published literatures, with regard to the annual number of liver transplant and medium-term patient survival rates. However, local and national efforts are needed to overcome organ shortage as a concerning threat.

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Benign or Malignant? It Makes Even a Bigger Difference When It Comes to Organ Transplantation

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Introductions. Organ donation and transplantation has been widely performed from brain dead donors who had suffered from different types of brain tumors. However, it is fundamental to carefully exclude malignant and high risk types of tumors from the benign ones in order to avoid risk of transfer of the malignancy to the immunocompromised recipients. In this report, we discuss destiny of 8 brain dead potential organ donors whose radiology reports were high probability of malignant tumors.
Methods. After reconsidering the previous strategy based on radical exclusion of potential organ donors with probable malignant brain tumor (which were suggested by expert radiologists upon magnetic resonance imaging results), we decided to perform frozen section of these cases after organ retrieval. 8 tandem brain dead cases which were diagnosed as malignant brain tumors were biopsied and frozen sectioning was performed after craniotomy. Results of definitive pathology reports were compared to radiologist's diagnosis.
Results. 5 out of 8 tumors were reported benign and organ transplantations were performed without any tumor associated complications in recipients after 3 years observation period. Pathology reports included low grade astrocytoma, benign meningioma and low grade glioblastoma. 2 malignant tumors were in concordance with the radiology reports which were glioblastoma multiform and meduloblastoma. In 1 case, subarachnoid hemorrhage was responsible for brain death and no tumor was found.
Conclusions. Occurrence of brain death can cause significant disorganization in brain tissue and anatomy. Even some expert radiologists may have errors in their diagnosis. Careful consideration of these changes can help to distinguish malignancies from benign conditions in this life saving decision making challenge. Frozen sectioning after organ retrieval is the best way to avoid overlooking these precious donors.

P 130

The Effect of Osmotherapy and Tight Control of Acidosis on Early Graft Function among Deceased- Donor Kidney Transplant Recipients: A Randomized Controlled Trial

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Introduction. Reperfusion injury and the acid-base status of the transplant are important factors affecting post-transplantation graft function. We hypothesized that infusing hypertonic saline (HS) or tight control of acid-base status of the blood rushing through renal graft using sodium bicarbonate may have beneficial effects on early graft function.

Methods. Candidates for deceased-donor kidney transplant were randomized into three groups. HS group (n = 33) received 50 mL/kg normal saline (NS) titrated during operation plus 4 mL/kg of 5% HS just within graft reperfusion phase; bicarbonate group (n = 37) was administered 60 mL/kg NS while their metabolic acidosis (base excess ≤ -5 meq/L) was tightly corrected every 30 min with sodium bicarbonate; and a control group (n = 36) that received 60 mL/kg normal saline while they were administered sodium bicarbonate only, if they encountered severe metabolic acidosis (base excess ≤ -15 meq/L). The primary outcome was defined as early post-operative renal function evaluated based on serial serum creatinine levels. The study was registered in Iranian Registry of Clinical Trials (IRCT2013122815841N19).
Results. Post-operative early graft function improved significantly during the first 3 days in the intervention groups ($P < 0.05$). However, that beneficial effect no longer remained at the same level after the day four.
Conclusions. Timely administration of HS or tight control of metabolic acidosis with sodium bicarbonate infusion improve early renal function during renal transplant surgery.

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Report of a 75 Years Old Brain Dead Organ Donor, Is There any Border?

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Introductions. Organ donation from elderly donors is always considered in classification of extended criteria donors. In this report we introduce a deceased organ donor not owning any criteria of ECD except for advanced age.
Case Report. A 75 year old man suffering from closed head trauma referred to organ procurement unit of Masih Daneshvari hospital in Tehran. After primary diagnosis of brain death and standard medical care for organ resuscitation, the liver was retrieved. After microscopic investigation of liver biopsy, transplantation was performed. The patient had no history of hypertension, Diabetes, dyslipidemia and disease of heart, liver or kidneys. Lab tests included: Cr: 1.3, Urea: 44, AST: 31, ALT: 22, ALP: 181, Bilirubin total: 0.5 mg/dl, INR: 1.54. Ultrasonography was performed which showed normal size liver with normal biliary ducts. Fatty liver grade 1 was witnessed. Kidneys had normal parenchymal pattern. Right kidney had 113mm PD diameter with PD of 13 mm. left kidney had 118mm and PD: 12. No renal stone or hydronephrosis was reported. Unfortunately kidney transplantation teams did not accept kidneys despite having candidates in their waiting list. However, liver transplantation was performed after designation of mild macrovesicular fatty change in biopsy result. After approximately 2.5 years after transplant, liver has normal function.
Conclusions. It is not appreciated these days to reject scarce deceased organs just because of donors advanced age especially who has been cleared for history of chronic disease risky for organs viability. In case of doubtful decision making situations, liver or kidney biopsy can be performed for exact investigation of the organs by transplant teams.

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ABSTRACTS

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O 201

Protocol Biopsy in Kidney Transplantation

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Introductions. For the purpose of earlier detection of pathologic abnormalities that usually appear before allograft dysfunction protocol biopsy has been suggested. Protocol biopsy means performing biopsy in allograft kidneys with stable function at predefined times after transplantation. Yet there is a concern about the benefit and need for protocol biopsy.
Methods. In a cohort of 36 renal transplant patients in whom protocol biopsy was performed after transplantation we looked for pathologic findings and complications related to biopsy. Protocol biopsy was scheduled to be performed in 3-12 month after transplantation in those transplanted patients whose creatinine had been stable (within 10% of baseline). Patients was evaluated in terms of hematoma, hematuria (microscopic or macroscopic), hypotension, anemia, transfusion, bladder obstruction, arteriovenous fistula, need for nephrectomy and length of hospital stay after biopsy. Biopsy findings also reported.
Results. Among the 36 transplanted patients in this study in whom protocol biopsy was done 3-12 month (mean 6.16) after transplantation, 7 patients (19.4%) had microscopic hematuria with no macroscopic hematuria in any of the participants. 3 of them (8.3%) suffered from minor hematoma which non-of them were expanding. All other complications including hypotension, need for nephrectomy or blood transfusion, bladder obstruction and/or AV fistula were not seen. Between 36 transplanted kidney in this study the pathology of 69.4% (n = 25) of them were normal, 8.3% (n = 3) had Ab-mediated rejection, 2.8% (n = 1) had T-cell mediated rejection, 2.8% (n = 1) was diagnosed to have borderline change of cellular rejection, 8.3% (n = 3) were diagnosed for acute tubulointerstitial nephritis and 8.4% (n = 3) had other diagnosis like patchy chronic tubulointrestitial infiltration, mild chronic change IF/TA 15% and mild stripped IF/TA (10-15%) suggestive of CNI induced toxicity. The mean hospitalization time for protocol biopsy was 1.4 days.
Conclusions. we conclude that biopsy at predetermined time after transplantation might provide the opportunity to diagnose and treat pathological processes early in their course, while the complications of the process seems to be little. Due to our small sample size, a larger study with higher sample size is suggested for further evaluation of our results.

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NGAL as Emerging Biomarker of AKI in Sepsis

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Introductions. Rapid reduction in renal filtration and the retention Of nitrogen and other excretory substances are manifestations of AKI .1% of the healthy population and 3-7% of the bedridden patients in hospitals show signs of acute renal damage. Sepsis is one of the factors involved in the development of AKI in more than 20% of the patients who admitted In the ICU.
Methods. 129 patients participated in this study, 79 0f them were in the control group and 50 of them were the Sepsis Group (patients diagnosed with sepsis in the Valiasre hospital). The serum levels of NGAL and Cr was checked once in the control group and in patients with the probability of sepsis,the serum level of NGAL was checked within the first 24 hours post administration And the serum level of Cr was also checked for 3 consecutive days. The serum levels of NGAL was compared among the control group and the sepsis patients and the serum levels of NGAL in patients with Sepsis was compared with the increase in serum levels of Cr as a parameter of acute renal damage.
Results. Significant rise in the serum levels of NGAL was seen in the sepsis group compared to the control group ($P < 0.001$). Serum levels of Cr on the first day had no significant correlation with the development of AKI and could not predict the incidence of AKI ($P < 0.19$), however the serum levels of NGAL was related to the incidence of AKI in the following days and the serum levels

of NGAL was significantly higher in patients with AKI compared to patients without AKI. ($P < 0.0001$). A Significant correlation was found between the NGAL level and the mortality rate and the NGAL level was higher in patients who died. ($P < 0.001$)
Conclusions. Results of this study revealed that the serum level of NGAL increase in patients with sepsis predicting the incidence of acute renal failure in the next few days. Serum levels of NGAL also had a significant correlation with the mortality rate.

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The Association of Matrix Metalloproteinases-2 and -9 with Endothelial Dysfunction, Cardiovascular Disease Risk Factors and Thrombotic Events in Children with ESRD

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Introductions. Cardiovascular disease (CVD) is the main cause of death in children with end stage renal disease (ESRD). Matrix Metalloproteinases (MMP-2, MMP-9) are members of endopeptidases which contribute in atherosclerosis and arterial calcification. The aim of this study was to evaluate the association of MMP-2 and MMP-9 with markers of endothelial dysfunction (sE-selectin and brachial flow mediated dilatation (FMD)), several biochemical risk factors of CVD and thrombotic incidents in children with ESRD.
Methods. Thirty-one children with ESRD and 18 healthy age- and sex-adjusted subjects as control group were recruited in the study. Serum levels of MMP-2, MMP-9, sE-selectin, phosphorus, calcium, parathyroid hormone (PTH), lipid profile, thrombotic factors and albumin were measured in two groups. Also, FMD was measured in both groups by Doppler ultrasonography. Thrombotic events were assessed in patients with ESRD.
Results. The levels of MMP-2 (166.25 ± 26.88 vs. 126.66 ± 31.43 ng/ml; $P = 0.0001$) and MMP-9 (347.41 ± 104.01 vs. 277.77 ± 168.68 ng/ml; $P = 0.01$) were significantly higher in patients than controls. MMP-2 was positively correlated with systolic blood pressure, diastolic blood pressure, sE-selectin, creatinine, cholesterol, triglyceride, LDL, phosphorus, PTH and was negatively correlated with BMI, HDL and FMD. MMP-9 was correlated with sE-selectin, phosphorus, PTH and albumin positively and was negatively correlated with BMI. Six patients (19.3%) had thrombotic incidents. There was no significant difference between the levels of MMP 2 and MMP9 in patients with and without thrombotic events.
Conclusions. In this study, we determined the associations of MMP-2 and MMP-9 with markers of endothelial dysfunction and several traditional and uremia related CVD risk factors in children with ESRD. No associations were found between these two MMPs and thrombotic events in these patients.

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Serum Calcium, Phosphorus and Parathyroid Hormone Levels in a Total of 7009 Iranian Hemodialysis Patients, A Multicenter Study

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Introductions. Mineral bone disorder (MBD) is one of the major factors affecting mortality and morbidity in dialysis patients. This study aimed to evaluate the MBD laboratory parameters in hemodialysis patients in Iran; it also evaluated the factors preventing the achievement of the targets
Methods. This multicenter observational study was conducted in 58 dialysis center in 20 provinces of Iran in 2015-2016. A total of 7009 patients older than 18 years who were receiving chronic hemodialysis were studied for more than three months. The laboratory parameters associated with MBD, including calcium (Ca), phosphorus (P) and iPTH were measured during 3 months and compared to the KDOQI (Kidney Disease Outcomes Quality Initiative guidelines). Moreover, CRP inflammatory marker and the status of malnutrition in patients were also assessed.
Results. Overall, 51.7%, 61.3%, 24.7%, and 16% of the patients respectively, reached the KDOQI target levels of Ca, P, iPTH, and CaxP product. Hypercalcemia and hyperphosphatemia were

observed in 20.5% and 34.2% of the patients, respectively. Moreover, 46% and 29.3% of the patients, respectively, had a PTH level < 150 pg/ml and > 300 pg/ml. The percentage of malnutrition in patients with a PTH level < 150 pg/ml was significantly higher than that in patients with a PTH in the target range or with a PTH > 300 pg/ml (respectively, 47.6%, 40.2%, and 35.7%, $P < 0.001$); furthermore, their CRP inflammatory marker was significantly higher than that of the other two groups. In total, only 8.3% of the patients reached the four KDOQI target levels of MBD

Conclusions. The findings of this study showed that only a small percentage of hemodialysis patients had reached all KDOQI targets. In addition, the percentage of patients with a PTH level < 150 pg/ml was significantly high. The problems associated with the type of medications, their availability, and coverage by insurance schemes are among the factors preventing the achievement of the targets, particularly in developing countries. The effects of inflammatory and nutritional factors should also be considered further.

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Quality of Life, Depression, Anxiety, and Coping Mechanisms in CKD Patients Undergoing HD, PD, and Kidney Transplantation

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Introductions. CKD is one of the important problems worldwide with increasing prevalence rate. Patients suffering from this disease need to use one of methods of renal replacement therapy including hemodialysis (HD),peritoneal dialysis (PD) and kidney transplantation. ESRD and modality of treatments influence physical and mental health such as stress,quality of life,anxiety and depression. Comparing of quality of life in 3 treatment groups and evaluate the level of anxiety and depression could help us in managing patients. Awareness of patients familial support can help in future programming and controlling this disease too.
Methods. This study including patients with ESRD undergoing HD (66 patients),PD (70 patients) and kidney transplantation (79 patients). Checklist of demographic informations,quality of life questionnaire,Hamilton anxiety and depression scale,Cassidy social support inventory and Lazarus coping mechanisms distributed between patients. Data were analyzed by SPSS11.
Results. Kidney tranplantation patients had the highest mean score in most of the area of quality of life questionnaire. There were no significant differences between depression and anxiety mean score in 3 study groups (P = 0.92 and 0.95 respectively). Most patients had desirable social support. HD and PD patients had the highest and lowest social support respectively. Kidney transplant patients had the highest score in all 8 parts of coping mechanisms that mean this group use coping mechanisms more than the others.
Conclusions. Since kidney transplant patients had better quality of life in this study more appropriate programs for organ donation from brain dead patients are suggested. Identifing useful coping strategies in patients and teach them to nurses and caregivers would help patients in cope with upcoming problems and this would lead to better quality of life.

P 202

Association of GFR on Presentation with Subsequent 4 Years Clinical Outcomes in Acute Coronary Syndrome

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Introductions. Ischemic heart disease is more prevalent and aggressive in patients with advanced renal disease. Previous Studies conducted in western countries, have revealed that impaired renal function is associated with a poor in-hospital and long term prognosis in patients with heart disease; the progress of the disease is quicker, complications more frequent, and restenosis more common among revascularized patients, etc. The aim of this study was to determine the association of glomerular filtration rate (GFR) with early and late clinical outcomes in the setting of acute coronary syndromes (ACS).
Methods. The study included 339 consecutive patients with acute coronary syndrome (with or without ST-segment elevation) admitted to a coronary care unit in Iran. GFR was calculated using the Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI) and Modification of Diet in Renal Disease (MDRD) equations. Patients were followed for four years.
Results. Three hundred thirty-nine patients admitted for acute coronary syndrome (age 61.2 ± 12.1 years, 64% male) and followed for 4 years were included. The mean ± standard deviation of serum creatinine level on admission was 1.2 ± 0.4 mg/dl and of GFR were 61.9 ± 19.0 and 62.4 ± 18.9 ml/min according to MDRD and CKD-EPI equations, respectively. There was an independent association between decreased GFR according to MDRD and all-cause mortality at 1

year (OR 1.18, 95% CI 0.99–1.51, $P < 0.05$) and at 4 years (OR 1.18, 95% CI 1.0–1.38, $P < 0.05$); similar results was obtained by using CKD-EPI equation. But impaired GFR was not independently associated with stroke and recurrent ischemia as well as with major bleeding ($P > 0.05$).
Conclusions. In the setting of ACS, impaired GFR is associated with higher long term mortality, independently.

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E-Learning Model in Chronic Kidney Disease Management, A Randomized Control Trial

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Introductions. Chronic kidney disease (CKD) is a health problem. The present study was designed to examine impacts of self-care (self-management) education through e-learning on improving renal function in individuals with CKD.
Methods. CKD patients receiving care at ten centers for treating non-communicable diseases constituted the population studied here. Three centers were selected randomly and 39 patients with glomerular filtration rate (GFR) below 60 ml/min/1.73m^2, minimum education of ninth grade, minimum of two referrals, and with computer literacy of the individual or a first degree relative were included in the study while 92 patients were assigned into the control group. Changes in GFR were compared after 6 months following e-learning program for the patients in the intervention group.
Results. Analysis of covariance was used to evaluate the impacts of the intervention on changes in GFR. Given the significant difference between the two groups in terms of mean age, age was incorporated into the analysis to examine effects of the intervention after controlling for age. It should be noted that mean variation of changes in GFR for the intervention group was 7.5 ± 8.9 ml/min/1.73m^2 (M ± SD). The value obtained for the control group was -2.3 ± 8.5, which indicates that renal function in the intervention group receiving education under this program was improved by 9.8 ml/min/1.73 m^2 compared to the control group while patients in the control group experienced progressed CKD.
Conclusions. According results of this study, effects of the e-learning educational intervention on improvement in renal function and CKD treatment were established.

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Comparison of Alpha-Tocopherol with N-Acetylcystein in Contrast Nephropathy Prevention in Chronic Kidney Disease Patients

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Introductions. The administration of radiocontrast media can lead to a usually reversible form of acute kidney injury called contrast induced nephropathy (CIN) that increases the likelihood of patient morbidity and mortality following coronary angiography. There is no specific treatment once CIN develops so the best treatment of contrast-induced kidney injury is prevention. The only approved prevention of CIN is volume expansion with saline. There is conflicting results about using antioxidants in preventing CIN. The present study was conducted to examine the effect of alpha tocopherol in preventing CIN.
Methods. This prospective controled trial was carried out in 201 patients with CKD undergoing coronary angiography. 72 patients were assigned to prophylaxis administration with 0.9 saline infusions, 66 patients with 0.9% saline plus N-acetylcysteine (2 times a day) for total 2 days and 63 patients with 0.9% saline plus daily alpha tocopherol for total 4 days. PatientseGFR were compared before and after coronary angiography.
Results. Although there was no patient with CIN in all three studied groups, there was statistically significant reduction in eGFR from baseline eGFR in all three groups. The eGFR reduction in isotonic saline group was more than the other two groups. But in diabetic patients, GFR decrement was grater in alpha tocopherol group.
Conclusions. Administration of alpha tocopherol besides to isotonic saline has no additive beneficial

effect to isotonic saline in preventing CIN. Also,isotonic saline in diabetic CKD patients is enough for CIN prevention but, in none diabetic patients, NAC and alpha tocopherol have additional protective effect in CIN prevention in comparison whit isotonic saline alone.

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The Effects of SevelamerDose on Renal Diseases, P and FGF23 Levels in Chronic Kidney Diseases Rats

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Introductions. Hyperphosphatemia is associated with severe complications include secondary hyperparathyroidism, ectopic calcification of tissues. Fibroblast growth factor 23 (phosphate-regulating hormone) serum levels are positively correlated with hyperphosphatemia in patients with chronic kidney diseases (CKD). Fibroblast growth factor 23 Elevated levels of fibroblast growth factor 23 (FGF23) are associated with increased risk of adverse outcomes in patients with CKD. We assessed that changes in serum FGF23 level might be associated with change in serum phosphorus level caused by the sevelamer hydrochloride (phosphate binder).
Methods. Rats were fed an adenine diet 75% for 4 weeks to establish CKD. After Four weeks of the adenine diet, when serum phosphorus, creatinine and urea levels had significantly increased, then rats were offered either a normal diet or a diet containing 1, 2 or 3% Sevelamer for 4, 6 weeks that were matched to serum phosphorus and creatinine levels. Changes in the serum levels of phosphorus, FGF23, calcium and other biochemical parameters were detected.
Results. Serum phosphorus levels significantly decreased after sevelamer treated 1% (N = 11), 2% (N = 11) and 3% (N = 11) CKD rat groups in 4 and 6 weeks compared with the adenine controls (N = 10) especially with 2% sevelamer. Treatment with sevelamer significantly suppressed FGF23 increases in CKD rats throughout the study period in 4 and 6 weeks in 3% sevelamer.
Conclusions. Treatment with sevelamer controlled effectively serum phosphate levels in CKD rats. FGF23 levels can be manipulated through the control of serum phosphorus levels. Moreover, Sevelamer can inhibit the increasing of serum FGF23 levels in CKD patients.

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Human Leukocyte Antigen Alleles and Cytomegalovirus Infection After Renal Transplantation

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Introductions. Several studies have been conducted on the relationship between a number of human leukocyte antigen (HLA) alleles and cytomegalovirus infection (CMV), in kidney transplant recipients, after transplantation. This study aimed to investigate the relationship between 59 HLA alleles and the CMV infection, in transplant recipients, after kidney transplantation.
Methods. This retrospective cohort study was conducted on 200 patients, receiving a kidney transplant, in Baqiyatallah Hospital, in Tehran, during 2013. Throughout a one-year follow-up of kidney transplant recipients, in case of detecting the CMV antigen in patients' blood, at any time, they were placed in the group of patients with CMV infection, whereas, if no CMV-specific antigen was developed, over a year, patients were placed in the group of patients without CMV infection, after transplantation. This study investigated the relationship between CMV infection in kidney transplant recipients and 59 HLA alleles, including 14 HLA-A, 28 HLA-B, and 17 HLA-DRB1 cases.
Results. Of all participants, 104 patients (52%) were diagnosed with CMV infection. The CMV infection, in patients receiving a transplanted organ from deceased donor, was significantly high (63% vs. 39%, respectively, $P = 0.001$). Recipients with HLA-B44 were more infected (80% vs. 50%, respectively, $P = 0.024$); on the contrary, kidney recipients with HLA-DRB1-1 were less infected

with CMV . (31% vs. 55%, respectively, $P = 0.020$). Results of multivariate logistic regression analysis showed that deceased donor renal transplantation (OR = 3.018, 95% CI: 1.662−5.480, $P < 0.001$), presence of HLA-B44 (OR = 4.764, 95% CI: 1.259−18.032, $P = 0.022$) and lack of HLA-B8 (OR = 3.246, 95% CI: 1.030−10.230, $P = 0.044$) were the independent risk factors for developing CMV infection, after kidney transplantation.

Conclusions. The findings of this study showed that deceased donor renal transplantation and the presence of HLA-B44 can make the kidney recipient susceptible to CMV infection after kidney transplantation; on the other hand, the presence of HLA-B8 can have a protective effect.

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MicroRNA-148a, a Potentially Reliable Biomarker Associated with Renal Allograft Dysfunction

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Introductions. Despite the improvement in short-term graft outcome, most of the renal recipients will develop chronic allograft dysfunction (CAD), the foremost cause of renal graft loss worldwide. So far, CAD is diagnosed by renal biopsy when irreversible damages occur in the graft. Due to invasive nature of the histological study, novel non-invasive biomarkers are required in biomedicine. Here, the researchers sought to determine the significance of circulating miR-148a expression levels in anticipating the renal graft function.

Methods. Circulating miRNAs were isolated from 53 plasma samples of recipients with biopsy proven interstitial fibrosis and tubular atrophy (IFTA) and recipients with stable graft function (SGF) and 15 healthy controls as controls. Expression levels of miR-148a and miR-433 were evaluated by real-time quantitative-PCR (q-PCR) and correlated with clinical and histological parameters.

Results. MicroRNA-148a expression significantly down-regulated in recipients with IFTA ($P < 0.001$). A diminished level of miR-148a was even lower in recipients with IFTA garde III. miR-148a levels indicated a significant correlation with serum creatinine levels (r = 0.451, $P = 0.021$) and inverse strong correlation with eGFR (r = -0.520, $P = 0.006$). miR-148a expression levels could discriminate IFTA in recipients with an area under the curve (AUC) of 0.89 ($P < 0.001$) with 97% sensitivity and 72% specificity.

Conclusions. Plasma cell-free miR-148a correlated with renal function and histological grades; therefore, its level should be further investigated as a novel non-invasive molecular biomarker of progression to fibrosis and tubular atrophy in renal transplant recipients.

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High Frequency of Obesity and Overweigh After Renal Transplantation

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Introductions. Overweight and obesity is considered to influence the development of complications of metabolic syndrome, a risk factor for shortened graft survival and recipient survival. Despite reduction of weight gain with the new immunosuppressive regimes, obesity is more common in post transplant period and its effects on adult renal transplant outcomes are controversial. The aim of our present work was to investigate the frequency of pretransplant and posttransplant obesity in renal transplant patient and their relation to graft outcomes in childhood.

Methods. In this cross sectional study seventy one consecutive renal transplant (Tx) recipients (42 boys and 29 girls) were included. Their mean age was 14.4 years and the mean follow-up was 3.57 years (SD: 1.68). Basal immunosuppression was steroids, calcineurin inhibitors (cyclosporine or tacrolimus) and mycophenolate mofetil (MMF)

in all patients.

Results. At the time of transplantation mean of body mass index (BMI) was 16.7 kg/m^2 (SD: 2.9), namely, BMI < 3th percentile in 19%; 3 to 85th percentile in 62% and > 85th percentile in 19%; while at the time of our study mean BMI was 22 kg/m^2 (SD: 5.3), BMI < 3th percentile in 8.5% and > 85th percentile were 35.1%. Pretransplant overweight (BMI > 85th percentile) was associated with chronic continues decrease of GFR (P = 0.008), hypertension (P = 0.014), and pretransplant hyperlipidemia; but was not associated with gender, long term post Tx high weight gain, dialysis history, and acute rejection. Obesity was significantly more common in post Tx period (P = 0.043) and it was more frequent in non-prolonged graft duration (P = 0.01) and hypertriglyceridemia (P = 0.005) but it was not associated with acute rejection and chronic continues decrease of GFR, hyperlipidemia, proteinuria and hypertension.

Conclusions. Overweight is more frequent in posttransplant period. It was not risk factor for graft or patient survival in our experience whereas pretransplant obesity had some effects on long term graft outcome.

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PretransplantSerum FT3 LevesAre Useful for Identifying Patients with Higher Risk for Renal Allograft Failure

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Introductions. Abnormalities in thyroid function are observed in patients with end stage renal disease. Some studies demonstrated that serum free triiodothyronine 3 (FT3) levels are negatively correlated with serum markers of inflammation and endothelial activation in patients with ESRD. The present study evaluated free triiodothyronine (FT3), free thyroxine (FT4), and thyroid-stimulating hormone (TSH) concentrations before renal transplantation relative to the occurrence of delayed graft function and one year allograft survival.

Methods. Eighty-nine consecutive patients (53 male and 36 female patients; mean age, 53.2 +/- 12.8 years; hemodialysis duration, 92.32 +/- 14.52 months) undergoing kidney transplantation at two transplantation center were entered in this cross-sectional study. FT3, FT4, and TSH concentrations were measured on the day before transplantation. correlation between FT3, FT4, TSH and delayed graft function and one year graft survival was assessed using chi_square, fisher exact test and Kaplan–Meier.

Results. The mean (SD) serum FT3 concentration was significantly lower before transplantation in patients with delayed graft function compared with those with normally functioning allografts (92 ± 26.67 ng/dL versus119 ± 29.64 ng/dL; P-value = .038). And also there was a correlation between lower FT3 concentration and worse one year allograft survival.

Conclusions. The results of this study demonstrate that among patients with ESRD undergoing kidney transplantation, those displaying lower pretransplant serum FT3 levels are at higher risk for subsequent graft failure. Our results suggest that measurement of pretransplant serum FT3 levels might represent a clinically useful parameter to identify patients with increased risk for graft failure.

P 210

The Effect of Aerobic Training on the Amount of GFR and Excreted of Creatinine in Patients with Chronic Kidney

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Introductions. The main characteristic of kidney disease is the decrease in Glomerular filtration Rate (GFR). Physical exercise seems to influence GFR and the operation of kidney. The study has been conducted to determine the effect of eight weeks running on treadmills on the amount of GFR and another factor of operation of kidney of patients with chronic renal.

Methods. Fifty subjects were chosen among male patients with chronic renal who had gone to kidney disease clinics. Before the beginning of the exercise period, blood test and 24 hour urine samples were taken and the amounts of the GFR were calculated using the Creatinine Clearance Method. An exercising program was given to the

empirical group including eight weeks running on treadmills with the intensity of 50-80% maximal heart rate, which was practiced thrice a week, each session lasting 30- 40 minutes. After the end of the exercising period, blood and urine tests were taken from both control and experimental groups under the same condition.

Results. Meaningful differences was perceived in the amount of GFR between control and empirical groups after 8 Week Running on Treadmills ($P = 0.05$). There was also a significant difference between excreted creatinine of the 24 hour urine of the control group and empirical group after 8 Week Running on Treadmills ($P = 0.005$). But there was no meaningful difference in the amount of creatinine serum ($P = 0.7$) and serum urea nitrogen ($P = 0.1$) between control and empirical groups after eight weeks running on treadmills.

Conclusions. Aerobic activities could be prevent chronic renal in the first stages. It can also be effective in the prevention or postponement of the development of chronic renal failure.

P 211

Activated Macrophage Syndrome After Renal Transplantation, Single Center Experiences

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Introductions. Activated macrophage syndrome or Hemo-phagocytic syndrome (HPS) in immune-compromised individuals often happens after an inflammatory trigger such as viral infection. Inability of immune system to eradicate the infection lead to cytokine storm and macrophages proliferation in the bone marrow and reticuloendothelial system. That starts the ingestion of hematopoietic cells.

Methods. In this retrospective study, we included all diagnosed cases of HPS among in our renal transplant recipient between January 2012 - January 2016. Their demographic characteristic, immunosuppressive regimens, laboratory and bone marrow biopsy findings, underlying infections, and one year patient and allograft survival are studied and presented here.

Results. Totally we entered 12 (M/F 5/7, 23-49 year) patients who fulfilled the criteria of HPS. Their presenting signs were severe anemia and pancytopenia (12/12.100%). Majority presented In the first year of transplantation (10/12, 83%) Elevated serum cretinin (Scr) > 2mg/dl (12/12,100%), serum ferritin > 500iu (10/12, 83%), serum triglyceride > 500 mg/dl (7/12, 58%) were also detected. Bone marrow study revealed activated macrophage (12/12, 100%) and large pro-normoblast (4/12, 33.3%). Serologic study confirmed; parvovirus B19 infection in 4/12 (33.3%), cytomegalovirus (CMV) infection in 2/12 (16.6%), combined CMV and parvovirus in 1/11 (8.3%), BK viremia in 1/11 (8.3%) patients . No etiology was found in remaining 3/12 (25%) patients. In addition to supportive cares, Immunosuppression reduction, specific antiviral therapy and IVIG were our therapeutic protocol. After one year two patients lost the allograft (16.6%), two patients returned to normal (Scr < 2 mg/dl) allograft function, and remaining 8/12 (66.6%) reached a partial response (Scr,2-4 mg/dl).

Conclusions. Awareness about the HPS among renal transplant recipient I very important. Its early diagnosis, specific antiviral treatment and immune suppressive reduction could save the allograft. Its differentiation from acute rejection is very important because intensifying the immunosuppression is catastrophic.

P 212

IgG4-Related Disease and Membranous Nephropathy, Case Report

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Introductions. IgG4-related disease (IgG4-RD) is a fibro-inflammatory condition characterized by dense lympho-plasmacytic infiltration of different organs and elevated serum IgG4 level. The disease involves pancreas, kidney, liver, lung, peripheral nerve, thyroid, and lacrimal glands

CaseReprot. A 78-year-old female was referred because of elevated serum cretaining and history of eyelids swelling, edema and proteinuria. Renal biopsy that was performed 2 years ago was compatible with membranous nephropathy. She

had a long history of xerostomia and xerophtalmia. CT scan study of abdomen that was performed because of epigastric showed cortical cyst like lesions in both kidneys, ahypo-dense lesion 15×11mm in pancreas and another two; 16×11mm and 11×19 mm in right and left adrenal glands. Antinuclear, anti-SSA/SSB, and ANCA (P and c),and RF antibody all were negative. serum IgG4 ; 1870 mg/dl (normal 8-140 mg/dl) was compatible with IgG4-RD in our patient. .

Conclusions. Kidney is one of the important involved organs in IgG4-RD. Interstitial nephritis is the main form of renal involvement. Membranous nephropathy is a rare form of renal insolvent. Awareness about the diverse presentation of IgG4-RD is necessary for its early diagnosis.

P 213

Macro-Platelet Thrombocytopenia and Nephritis, a Place to Make a Mistake, Case Report

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Introductions. Macro-platelet with thrombocytopenia (MTCP) with glomerulonephritis happens in a group of inherited disease that is related to mutate genes of MYH9 at chromosome 22q 11-13 encoding the non-muscle myosin heavy chain. Different phenotypic presentation of this mutation with autosomal dominant inheritance has been described as Epstein, Fechtner and Sebastian syndrome.

Case Report. A 33 years old male with thrombocytopenia, proteinuria and elevated serum lactic dehydrogenase (LDH) with the consideration of thrombotic microangiopathy (TMA) underwent therapeutic plasma exchange (TPE). Lake of response to TPE, normal serum level of metalloproteinase ADAMTS 13, normal levels of complement factors C3,C4,CH50, noirmal levels of complement inhibitory factors H and I later ruled out the possibility of TMA. He reached the end stage renal disease (ESRD) and regular hemodialysis was started. Two of his brothers had the same condition . One of them died because of severs sepsis and another because of cerebral hemorrhage. Future examination of the patients revealed the large platelets in the peripheral blood. Audiometry study confirmed the high pitched hearing lost. The patient's condition was compatible with Epstein syndrome genetic study of the patient in another center confirmed the MYH9 gene mutation. MYH9 mutation leads to actin fibrils impairment. Structural impairment of podocytes, auditory Corti cells, leukocyte and platelets are related phenotypic presentation. There is no specific therapy. Spleen removal could be useful.

Conclusions. This condition should be differentiated from thrombotic microangiopathy (TMA/TTP) because intensified plasma exchange and unnecessary immunosuppression are ineffective and predispose the patient to sever complications and death.

P 214

Micro RNA Pattern in Lupus Nephritis Patients

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Introductions. The change in some epigenetic elements such as miRNAs results in aberrant immune responses leading production and secretion of nephritogenic autoantibodies as the main fundament of lupus nephritis (LN). The present study aimed to assess the miRNA profile of kidney biopsies in patients with LN with the purpose of describing the critical role of these elements in LN creation.

Methods. Eleven patients who suffered LN (as the case group) and 11 patients with normal kidney function who were candidate for nephrectomy due to cancer or cyst (as the control group) were included into the study. Kidney biopsies were taken from all LN and control subjects. RNA was extracted and converted to cDNA, then the cDNA was evaluated using NANODROP and then intra-renal expression of candidate miRNAs were quantified in the two groups. In the present study, four top-ranked miRNAs, miR-638, miR-146a, miR-198, and miR-731 were selected for qRT-PCR.

Results. Consistent with the microarray data, we found no significant difference in the expression

of all miRNAs between LN and control groups. Using Rest 2009 software, we did not also reveal any difference in expression of four miRNAs studied between the patients with LN and those without LN in both parametric and nonparametric patterns.
Conclusions. The expression of miR-638, miR-146a, miR-198, and miR-731 may not be related to occurrence of LN in Iranian population.

P 215

The Relationship Between Clinical and Pathological Findings and Outcome of Morphologic Variants of Primary Focal Segmental Glomerulosclerosis (FSGS)

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Introductions. The prevalence and clinical significance of histologic variants of primary focal segmental glomerulosclerosis (FSGS) and their correlation with outcome are different among various reports. The aim of this study was to evaluate the prevalence of FSGS variants, their clinical and laboratory characteristics and outcome, in a cohort of 2674 patients, biopsied from 2005 to 2014.
Methods. The records of 201 patients with primary FSGS, biopsied in Hasheminejad Kidney Center (HKC) were evaluated. Demographic, clinical, and laboratory data were collected from the medical charts and pathologic slides were re-evaluated according to Colombia classification. Complete remission was defined as proteinuria < 300 mg/24 hour and serum creatinine (SCr) < 1.4 mg/dl. Partial remission was defined as proteinuria < 2000 mg/24 hour and < 50% of baseline and SCr < 1.4 mg/dl. Active proteinuria was defined as SCr < 1.4 and proteinuria > 2000 mg/24 or > 50% of baseline. Chronic kidney disease (CKD) at admission was defined as SCr ≥ 1.4 mg/dl at baseline and interstitial fibrosis and tubulointersitial nephritis (IF/TA) score ≥ 30% or SCr ≥ 1.4 mg/dl for 3 months before admission. No response to treatment was defined as developing CKD (SCr ≥ 1.4 mg/dl for at least 3 months) in patients with no CKD at admission, progressive CKD, i.e., SCr ≥ 50% baseline at the end of follow-up in those with CKD at admission,or reaching to end-stage kidney disease (ESKD) or death in either group. The prevalence of FSGS variants, final outcome, response to treatment and renal and patients survival rates were assessed in the variants.
Results. From 201 patients, 119 (59%) were male with a mean age of 38 ± 15 (16-81) years. The most frequent variants of FSGS were NOS (68%), tip lesion (22%), peri-hillar (6%), collapsing (3%), and cellular (1%). CKD at diagnosis was seen in 43 patients (21.4%). Mean proteinuria and serum albumin at diagnosis were 3750 mg/24 hour and 3.2 g/dl, respectively. Proteinuria was significantly higher and serum albumin significantly lower in tip lesion than NOS variant (P = 0.001 and P = 0.001, respectively). At the end of follow-up (55 ± 27 months), 25 patients (12.4%) developed CKD and 107 patients (53%) had a complete or partial remission and 4 patients (2%) had a active proteinuria. There was no response to treatment, in 73 patients (36.3%), including 26 of the 43 patients with CKD at admission. The percentage IF/TA was significantly higher in the Collapsing variant. Last SCr was significantly lower in tip lesion than NOS and collapsing variants. The 1, 3, 5,7 and 10 years kidney and patient survival rates were 95%,88%, 75%, 59% and 49%, and 99%,98%, 94%, 87% and 87% respectively. The kidney survival rates were significantly higher in tip lesion, perihilar, and cellular variants compared with NOS and collapsing variants (P = 0.001). Patient survival rates were not different between the variants (P = 0.657).
Conclusions. The most frequent FSGS variant was NOS type followed by tip lesion. At the time of diagnosis, the amount of proteinuria and hypoalbuminemia were more severe in tip lesion, despite lower IF/TA score. Response to treatment and kidney survival rates were higher in tip lesion compared to other variants.

P 216

Effects of Pentoxifyllineon Reducing Acute Kidney Injury, Inflammation and Oxidative Stress After Cardiac Surgery

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Introductions. AKI is a common and serious post operative complication and may occur in up to 50% of all patients undergoing cardiac surgery and is associated with 8% mortality rate compared with 0.9% in non-affected patients and remains a major factor for post surgery adverse outcomes. Early interventions to prevent postoperative AKI can help decreasing morbidity and mortality in these patients. Using cardiopulmonary bypass during cardiac surgery triggers systemic inflammatory response and recruits pro-inflammatory cytokines such as tumor necrosis factor, interleukin -10 and IL-6 accompanying with production of free oxygen radicals which provokes oxidative stress in the milieu of ischemic reperfusion injury. Pentoxifylline as a non-specific phosphodiesterase inhibitor, can suppress the production of some factors of inflammatory response and oxidative stress, probably prevent post surgery AKI with these mechanisms. We examined the effects of pentoxifylline on preventing the development of AKI and reducing inflammatory and oxidative stress responses in patients undergoing elective coronary artery bypass graft surgery (CABG).
Methods. We performed a double blind randomized multicenter clinical trial, enrolling 100 consecutive patients undergoing elective CABG. Patients randomly and within concealment method divided into two groups, one to receive oral pentxifylline 400 mg every 8 hours from three days before surgery and the other group received placebo. All the intubation, surgery and weaning protocols were the same. Serum interleukin levels (IL-6, IL-10) C-reactive protein, total leukocyte count, erythrocyte sedimentation rate, serum albumin, plasma malondialdehyde, reduced glutathione level and thiobarbituric reactive substances as a marker of lipid peroxidation and urinary excretion of 15-F2-isoprostane and urine NGAL level measured before starting intervention 6, 24 and 72 hours after surgery. RIFLE criteria for AKI and timely clearance of creatinine measured before starting intervention and 6 and 24 and 72 hours after induction of anesthesia .
Results. Both groups did not differ significantly in demographic and baseline characteristics. 43 patients developed AKI 72 hours after surgery; 12 of them were in the intervention group and 31 in the control group ($P = 0.003$). Postoperative leukocyte count was also higher in the untreated placebo than in the pentoxifylline-treated patients . Starting from normal values at base line, CRP and IL-6 levels increased in both groups showing no significantly differences but higher results of blood IL-10 were seen in placebo-treated patients 72 hours post surgery . (46 ± 8.1 versus 15.6 ± 4.9, $P < 0.005$) . Pentoxifylline group also showed higher clinical although not statistical significant ($P = 0.1$) reduction of lipid peroxidation marker (thiobarbituric reactive substances). Pentoxifylline-treated patients showed 12.4% reduction in plasma malondialdehyde and 3% increase in blood reduced glutathione level.
Conclusions. This study reveals improvements in inflammatory markers, and oxidative stress by pentoxifylline, thus preventing some complications in patients undergoing cardiac surgery. We demonstrated pre-operative use of oral pentoxifylline can improve renal function and reduces post cardiac surgery AKI without causing hemodynamic instability in this population . Overall, we recommend future studies with larger sample size and longer follow up periods to determine the different aspects of administrating prophylactic pentoxifylline.

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Vitamin D Supplementation and Risk of Hypercalciuria

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Introductions. Increasing the risk for hypercalciuria following administration of vitamin D supplements remains still questioned. The aim of the present study was to determine whether use of vitamin D supplementation may increase the risk of hypercalciuria
Methods. This interventional study was conducted

on 30 consecutive patients aged 20 to 65 years who suffered from vitamin D deficiency (serum vitamin D level < 30 ng/ml) and also history of nephrolithiasis. The patients were treated with vitamin D supplement (50000 units per week for two months and then every two weeks until the end of the third month). Before and after the completion of treatment protocol, the serum calcium, creatinine, uric acid, 25OHD, and PTHA hormone and urinary creatinine, citrate, oxalate, sodium, uric acid, and calcium were measured.
Results. Administrating vitamin D supplement led to significantly increase in serum level of 25OHD from 10.4 ± 4.2 ng/ml at baseline to 44.0 ± 10.7 ng/ml ($P < 0.001$). Also, the median level of serum PTH was significantly reduced from 53pg/ml (22-163) to 38 pg/ml (16- 102) ($P < 0.001$). There was also a significant increase in urine citrate after using vitamin D supplement compared with the baseline value (from 341mg/24h (90- 757) to 411mg/24h (115- 1295), $P = 0.045$). increased urinary calcium was revealed in 53.3% of patients.
Conclusions. The use of vitamin D supplements in the patients with vitamin D deficiency may not lead to increased risk of hypercalciuria.

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The Mean Platelet Volume in Children with Pyelonephritis

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Introductions. The mean platelet volume (MPV) is a determinant of inflammation. The aim of the present study was to investigate the MPV levels in children with pyelonephritis and to evaluate the possible relationship between MPV and febrile UTI.
Methods. In this prospective observational study, 82 patients with Pyelonephritis (group A) and 82 patients with viral gastroenteritis (group B) were enrolled from 20 Jun 2013 through 15 Jan 2014. The patients were divided into two groups according to the presence of pyelonephritis and viral gastroenteritis. The pyelonephritis group (A) included 82 patients and the acute gastroenteritis group (B) included 82 patients. Complete blood count (CBC) parameters were measured at admission. Routine biochemical tests were performed. Groups were compared according to different parameters.
Results. A total of 164 patients were included from inpatients of Amir-Kabir Hospital. The mean platelet volume was lower in group (A) and it was associated with acute pyelonephritis ($P = 0.003$). The MPV (6.03 ± 0.26 fl vs. 9.06 ± 0.73 fl) was significantly lower in group (A), the platelet count (219.88- ± 52.31vs. 184.09 ± 52.21) was significantly higher in group (A), and the WBC count (13.01 ± 3.43 vs. 8.30 ± 1.13) was significantly higher in group (A).
Conclusions. MPV levels were significantly lower in children with pyelonephritis compared with controls. MPV can be used as a negative acute phase reactant in children with febrile UTI.

P 219

Serum NGAL as Emerging Biomarker of AKI Following CABG

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Introductions. Acute renal failure after coronary artery bypasses surgery (CABG) is associated with high mortality and morbidity. Early and predictive acute kidney injury (AKI) markers may be decisive for the clinical outcome of heart surgery. This study set out to test the hypothesis that serum Neutrophil Gelatinase-Associated Lipocalin (NGAL) is an early biomarker for AKI in patients after CABG.
Methods. Seventy-nine adult patients (47 men, 32 women; mean age: 65.9 ± 7.7 years) were prospectively studied in a single center from Jun to Dec 2015. sNGAL levels were measured by ELISA immediately before incision and 12 hours after surgery. AKI was defined as increase in serum creatinine from preoperative values by 25% or greater.
Results. AKI developed in 23 patients (29.1%). The mean serum NGAL concentrations in patients who developed AKI were significantly different

after surgery compared with patients who did not develop AKI ($P < 0.001$).
Conclusions. Incidence of AKI in patients after cardiac surgery is high. Likewise, sNGAL is a sensitivite and specific early predictive biomarker of AKI after CABG.

P 220

The Cytomegalovirus Infection Among Iranian Kidney Graft Recipients (Using ELISA & PCR Methods)

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Iran

Introductions. Cytomegalovirus (CMV) infection is one of the most common infectious problems following kidney transplantation. In this study we are aimed to investigate the CMV infection in the setting of renal transplant recipients in Urmia-Iran, using both ELISA and polymerase chain reaction (PCR) methods.
Methods. Ninety-six renal transplant recipients were selected randomly and enrolled in a cross-sectional study. Blood sampling was done via venipuncture, and all sera were investigated for anti-CMV IgM, and the seropositive cases in association with 14 randomly selected seronegative cases were investigated with PCR assay
Results. Thirty-three patients (34.3%) were seropositive for anti-CMV IgM, 3 patients (3.1%) were in borderline range, and 60 patients (62.5%) were seronegative. By considering the patients with borderline anti-CMV IgM levels as seropositive, 37.5% were seropositive for anti-CMV IgM. Among 36 seropositive cases, the CMV infection was confirmed in 19 (52.7%) of them using PCR. Age ($P = 0.40$), educational status ($P = 0.77$), History of pre-transplantation dialysis (0.52), History of Blood Transfusion ($P = 0.52$), and immunosuppressive regimen were not statistically different among recipients with positive versus negative CMV PCR study results.
Conclusions. The seroprevalence of CMV infection was demonstrated to be high in renal transplant recipients of Urmia-Iran. The rate was higher compared to several previous reports in the literature. ELISA method has an appropriate sensitivity to screen the recipients for CMV infection but considering its relatively low specificity, the seropositive cases are better to be confirmed by further PCR study.

P 221

Periodic Acute Kidney Injury and P369S Mediterranean Fever Gene Mutation

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Introductions. Familial Mediterranean fever (FMF) is an autoinflammatory disorder characterized by periodic attacks of serositis, artheralgia and fever. It has an autosomal recessive inheritance pattern of the involved pirin gene. Clinical FMF syndromes are prevalent among Iranian-Azeri population. Secondary amyloidosis is the main cause of renal involvement in these patients that happens particularly in undiagnosed or untreated patients. There are few reports of symptomatic cases among the heterozygous pirin gene carriers.
Case Report. A -64-year-old female was admitted because of oliguria, elevated serum creatinine up to 9.5 mg/dl and right knee arthritis. Aspiration of arterial fluid was compatible with reactive arthritis. Patient underwent acute hemodialysis and meanwhile she received 30 mg daily oral prednisolone. In the couple days and after one session of dialysis urine output increase and without any future need for dialysis and with improvement of arthritis and serum creatinine decrement to 3.0 mg/dl discharged from the hospital. Six months before her resent admission she had the same attack of arthralgia, painful oral ulcers, vomiting, and oliguria. Serum creatinine was 19 mg/dl, In that time also with the diagnosis of acute kidney injury (AKI) two sessions of hemodialysis was applied for her, but without any other treatment and after improvement of arteralgia and oral ulcers urine output starts to increase and she discharged from the hospital with serum creatinine of 3 mg/dl. She also mentioned another attack of serum creatinine elevation and edema 3 month before this past attack. After the first attack she was under regular serum creatinine measurement and we found a basal serum creatinine of 1.8 mg before the second attack and

serum creatinine of 3 mg/dl before the last attack. Renal biopsy was performed after the first attack. It was compatible with mesangial proliferative glomerulonephritis and Congo Red study was negative. Finally we performed a genetic study for Mediterranean fever (MEFV) gene mutation and we found heterozygous mutation of P369S mutation. At this moment we started colchicine combined with 10 mg of corticosteroid. Her creatinine remained stable around 2.5 mgldl without any episodes of AKI after one year.

Conclusions. We concluded that heterozygous mutation of MEFV gene could be the possible underlying mechanism for driving the inflammation toward the kidney and consequent episodes of AKI. Accompanied arthritis and oral ulcer during the AKI attacks support their inflammatory nature, and what we called periodic AKI with an analogy to periodic fever.

P 222

Soluble Tumor Necrosis Factor-Like Weak Inducer of Apoptosis (sTWEAK), a New Marker of CVD in Kidney Injury

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Introductions. Cardiovascular disease (CVD) is a main cause of mortality and morbidity in chronic kidney patients (CKD). Tumor necrosis factor-like weak inducer of apoptosis (TWEAK) is a member of the TNF superfamily that regulate, cell death, cell proliferation, inflammation and cell differentiation. TWEAK is constitutively present in the kidney. Cells can express both full-length sTWEAK (Soluble TWEAK) and mTWEAK (membrane-anchored TWEAK). Soluble TWEAK increases the secretion and expression of various proteins that involved in the inflammatory response.

Methods. Inflammatory response. Recent studies demonstrate the role of soluble tumor necrosis factor (TNF) weak inducer of apoptosis (sTWEAK) as a marker of cardiovascular disease in CKD patients and suggest a role for sTWEAK in the pathophysiology of vascular calcification and sTWEAK could be a novel biomarker of atherosclerotic in chronic kidney disease (CKD) patients. Newly, sTWEAK was presented as a possible biomarker which is downregulated in atherosclerosis.

Results. Atherosclerosis. Reduced sTWEAK levels follow declining of renal function, are strongly associated with endothelial dysfunction that predict cardiovascular events in nondialyzed chronic kidney disease patients. In contrast, elevated levels of sTWEAK predict poor survival in hemodialysis (HD) patients.

Conclusions. Circulating soluble TWEAK (sTWEAK) levels are a possible biomarker of adverse outcomes in CKD and can be a new biomarker of cardiovascular diseases well as cardiovascular outcome in CKD patients. Current preclinical data indicate that sTWEAK may provide diagnostic information and can be a therapeutic target in renal injury. Its role in human kidney disease should be further explored.

P 223

Increasing Trends in Resistance among Prevalent Urinary Tract Bacterial Isolates Recovered from Renal Transplant Recipients in a Single Center from Southern Iran during a 6 Year Period

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Introductions. Urinary tract infection (UTI) is the most common infection in renal transplant recipients. Increasing antimicrobial resistance among the urinary tract bacterial isolates could complicate the management of UTI in patients.

Methods. All urinary tract bacterial strains isolated from renal transplant recipients during hospitalization in immediate period after transplantation performed from March 2011 to

Dec 2016 in Nemazee Teaching hospital were investigated. We compared the rate of antibacterial resistance among the most prevalent uropathogens in two periods of time (March 2011 - March 2014 and April 2014 - Dec 2016).

Results. Totally, 439 bacterial uropathogen were recovered from 232 renal transplant recipients in these two periods. The most prevalent isolated uropathogen was Eschericia coli (n = 185, 42.2%), after that Enterococcus spp. (n = 107, 24.3%). From 180 isolates of Eschericia coli that were tested against penicillins, cephalosporins, fluroquinolons and cotrimoxazole, 149 strains (82.8%) were resistant to three or more agents. Increasing trend for multi-drug resistance was found in two time periods (78.2% vs 86.3%), although it was statistically not significant ($P = 0.15$). The frequency of susceptibility to nitrofurantoin was 73% (131/179), gentamycin 67.2% (39/58), amikacin 55.4% (97/175) and ceftizoxime 42.1% (61/145). Enterococci spp. were the second leading cause of UTI and the rate of vancomycin-resistant enterococci was alarming 77.3% (75/97) with statistically significant increasing trend in two periods (63.8% vs 90%), $P = 0.002$). The frequency of susceptibility of Enterococcus spp. to nitrofurantoin was 77.8% (77/99), to ampicillin 36.9% (34/92).

Conclusions. The rate of antimicrobial resistance of prevalent urinary tract bacteria recovered from renal transplant recipients was high and the increasing trend found to be alarming. The high prevalence of multi drug resistant Eschericia coli and vancomycin-resistant enterococci could complicate the therapeutic and prophylactic managements of UTI.

P 224

Increasing Donor Pool from Brain-Dead Cases

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Introductions. Organ transplantation is the last way for treatment of patients with end stage organ disease. The most important source for organ donation is brain dead donors. 15-30% of patients in waiting list depending on the center and organ, die in waiting list because of donor shortage. Every solution that could increase donor pool results in decreasing waiting list death. In Iran taking consent from first degree family members of brain dead person is mandatory for organ donation. During 2015-2016 we could increase 50% in organ donation pool including lungs in organ procurement unit of Shahid Beheshti University of Medical Sciences in Iran.

Methods. From beginning of 2015 we doubled contacting heath care centers by phone during days to detect brain dead person. At the same time we doubled detection by experienced inspectors during nights.

Results. After doubling of detection activities detection of brain dead cases increased 100% and suitable donors including lungs increased 50% and consent success rate increased from 75% to 90%.

Conclusions. Strict detection by every day contact by phone and every night detection by direct inspection can increase door pool by 50%.

P 225

Co-Culture of Human Pancreatic Islets and Pancreatic Mesenchymal Stem Cells for Use in Islet Transplantation

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Introductions. Pancreatic islet transplantation is one of the most promising approaches for Diabetes Mellitus treatment. Recently, researchers have made some efforts to optimize islet isolation and culture methods.

Methods. In this study, we isolated human pancreas islets using enzymatic and mechanical methods. The purified islets were co-cultured with the presented mesenchymal stem cells in the digested pancreas tissue. The mesenchymal stem cells were characterized using morphology study and flow cytometry analysis. The islets were evaluated with DTZ staining.

Results. The pancreatic mesenchymal stem cells showed fibroblast-like morphology and expressed CD44 and CD90, as mesenchymal stem cells markers. On the other hand, they did not express CD45 and CD 34. The pancreatic Islets were viable and showed positive DTZ staining before co-culture. The culture of islets alone resulted in cells death and loss of function after a few days. However, the co-culture approach let to the islets viability and functionality even after 2 weeks.
Conclusions. Co-culture of human pancreatic mesenchymal stem cells with pancreatic islets can maintain islet structure and features. Therefore, co-transplantation of these cells may improve islet stability and function.

P 226

Partial Replacement of Left Hemidiaphragm in Dogs by Either Cryopreserved or Decellularized Heterograft Patch

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Introductions. Large diaphragmatic defects are still a challenging issue for reconstruction using either synthetic prosthesis or bioprosthesis. To evaluate the possibility of using diaphragm allograft as a natural bioprosthesis in humans, we conducted a two-group study and compared cryopreserved and decellularized diaphragmatic heterograft patched in a canine model.
Methods. At the end of organ harvesting from a human donor, the left hemidiaphragm was taken to the laboratory in phosphatebuffered saline solution. The next step was freezing the grafts at -80°C, and preserving them for up to 2 months in Group 1. It was subjected to a detergent-enzymatic method (containing sodium deoxycholate/DNase lavations) of decellularization for 25 cycles in Group 2. Through left thoracotomy in the eighth intercostal space, cryopreserved patches in six dogs and decellularized patches in five dogs replaced the diaphragm. During the follow-up, sonography was done in all animals, but three and two dogs in Group 1 and 2 underwent computed tomography (CT) scan, respectively. The animals were euthanized after 6 months.
Results. There was no mortality. Sonography showed only motion impairment of the patches in all cases. In Group 1, CT scan showed mild atelectasis and scattered infiltration in the left lower lobe, fibrotic bands and minimal fluid collection under the diaphragm. In Group 2, CT scan showed scattered fibrotic bands and mild to moderate elevation of the left hemidiaphragm. There was no evidence of gross disruption and complete healing of the suture line. Necropsy in both groups showed patches were completely replaced with a dense fibrous tissue. In Group 1, focal calcification was noticeable in every case and foreign body-type granulomas were clearly seen all over the grafted tissue. Histology in Group 2 animals showed less inflammatory cell infiltration and scattered foreign body granulomas in comparison with the cryopreserved patch graft.
Conclusions. The gross healing process in the decellularized heterograft is similar to the cryopreserved diaphragm but with fewer inflammatory cells and foreign body granulomas on histology. Both of them can be used instead of bioprostheses with regard to the fact that the decellularized patch technique is more complex and expensive. It is recommended to compare them with commercial bioprostheses.

P 227

The Interplay of Deceased Donor Distance to Center on Liver Transplant Outcomes, A Methodological Evaluation Study

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Introductions. Sharing of deceased donor livers across local boundaries and thereupon selecting between in-center and out-center harvesting approach has been a topic of hot debate for over a decade. To decrease cold ischemia time (CIT) as a significant risk of short- and long-term graft failure, centralized organ procurement of non-resident deceased donors has been handled in our center since June 2013. In this study, we planned to look for any probable adverse effects of deceased donor transportation on short-term recipient outcomes.
Methods. We investigated for any significant differences of laboratory works at the time of discharge (liver enzymes, bilirubin, Blood Urea Nitrogen (BUN), Creatinine, and serum sodium), length of hospital stays, and 1-month patient survival rates between recipients with resident (N = 46) vs. non-resident (N = 76) deceased donors.
Results. Recipients with resident and non-resident donors were comparable with respect to age at transplant (mean 47.3 years vs. 42.5 years, *P* = .087), gender (male 42% vs. 58%, *P* = .099), and etiology of cirrhosis (hepatitis b cirrhosis 43% vs. 57%, cryptogenic cirrhosis 50% vs. 50%, and autoimmune hepatitis 37% vs. 64%, *P* = .469). Independent-samples T test found significant differences for aspartate aminotransferase (*P* = .018), direct bilirubin (*P* = .039), and BUN (*P* = .006) between two groups in favor of patients with resident donors. However, alanine aminotransferase (*P* = .324), total bilirubin (*P* = .053), creatinine (*P* = .31), and serum sodium (*P* = .39) were similar between groups. Moreover, similar results were observed for total hospital stay (median 17 days vs. 18 days, *P* = .481) and 1-month patient survival rates (97.8% vs. 96%, *P* = .787).
Conclusions. Distance to center may not be an impediment in the procurement area. To restrict the reverse effects of prolonged CIT, close post-transplant monitoring is required aiming to promote organ recovery. It is noteworthy that significant violation of some laboratory parameters may highlight the guidelines which must be considered for intercity deceased donors toward safe transportation.

P 228

Co-Culture of Wharton's Jelly-Derived Mesenchymal Stem Cells with Human Pancreatic Islets in Order to Islet Transplantation

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Introductions. Islet transplantation is an alternative treatment to daily insulin injections for patients with type 1 diabetes. The keeping of viable pancreatic islets is crucial for successful islet transplantation. In order to overcome islet quality loss during culture, it has been proposed to co-culture pancreatic islets with Mesenchymal Stem Cells.
Methods. In this study, human pancreas islets were isolated according to enzymatic and mechanical protocol. Then purified islets were co-cultured with Wharton's jelly-derived mesenchymal stem cells. The expression of CD90, CD44, CD105, and CD34 and as well as osteogenic and adipogenic differentiation of mesenchymal stem cells were identified. Also, the islets were evaluated with DTZ staining.
Results. The pancreatic Islets were viable and showed positive DTZ staining before co-culture. Wharton's jelly-derived mesenchymal stem cells expressed high levels of CD44 , CD90, and partly CD105 as mesenchymal stem cells markers. However, these cells did not express hematopoietic marker CD34. The culture of islets alone resulted in cells death and loss of function after a few days. While, co-culture islets with Wharton's jelly-derived mesenchymal stem cells lead to the islets viability and functionality after 7days.
Conclusions. Co-culture of islets with Wharton's jelly-derived mesenchymal stem cells has the potential for protecting islets from injury during culture period. Accordingly, by adjuvant co-transplantation of mesenchymal stem cells, the probability of successful outcomes of islet

transplantation will increase.

P 229

Impact of Genetic Polymorphisms of Cytochrome P450 2C19 on Tacrolimus Blood Level when Coadministered with Voriconazole

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Introductions. Many factors including enzyme polymorphism, and drug-drug interactions can affect the dose-response relationship in liver transplant recipients. The variability of drug-dose response in this group is especially important for drugs with a narrow therapeutic range such as tacrolimus and voriconazole. The aim of this study was to evaluate the tacrolimus level and its relationship with patients' voriconazole level and their CYP2C19 genotypes.
Methods. This study was conducted on 52 liver transplant patients. Genomic DNA was extracted from the blood samples and CYP2C19 genotypes were determined using TaqMan SNP genotyping assay. Voriconazole trough levels were quantified by a validated high-performance liquid chromatography method. Tacrolimus concentration was assessed before and after voriconazole prescription.
Results. During the observation period from Jan 2013 to Dec 2015, among 552 liver transplant recipients, 52 (9.4%) were with suspected fungal infections and 416 voriconazole trough levels were measured for them. The frequencies of CYP2C19 *1/*1, *1/*17,*2/*17, *1/*2, *2/*2, *17/*17 genotypes were 47.5%, 24.2%, 14.2%, 7.5%, 5.0% and 1.6%, respectively. The tacrolimus blood levels were found to be elevated in patients with *17/*17 genotype and lower voriconazole plasma level.
Conclusions. Close monitoring of tacrolimus concentration and its adverse effects, determining the CYP2C19 genotype and theraputic drug monitoring of voriconazole are recommended. These may allow the physicians to predict a tailoring dose regimens based on the patient metabolic capacity, optimize the treatment and decrease the risk of adverse events.

P230

Study of the Role of IFN-Regulatory Factors with HBV Infection and Clinical Outcomes in Liver Transplant Patients

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Introductions. Hepatitis B virus (HBV) leads to acute and chronic hepatitis which cause to cirrhosis and hepatocellular carcinoma (HCC) can safely treat after receiving of liver transplantation. Evaluation of the determinative biomarkers may facilitate management of post-transplant rejection. Therefore, in this study the expression levels of interferon regulatory factor-1,3 and 7 (IRF-1, IRF3, IRF7) which have functionally diverse roles in the regulation of the immune system was investigated in HBV infected liver recipients.
Methods. The HBV infected recipients were divided into 20 HBV rejected (HBV-R) and 26 HBV Non –rejected (HBV-NR) groups. In addition, a healthy control group composed of 13 individuals was considered. After RNA extraction and cDNA synthesis the expression levels of IRF-1,3and 7 was evaluated in three follow-up times post-transplantation using SYBR Green real time PCR method.
Results. The expression levels of IRF-1, 3 and 7 in HBV-NR recipients was compared with HBV-R recipients. The mRNA levels of IRF-1 was down regulated none significantly ($P > 0.05$) during each 1st and 4th day and significantly in 7th ($P = 0.004$) day post transplantation. The expression levels of IRF-3 was down regulated significantly ($P = 0.049$) in 1st day and up regulated none significantly ($P > 0.05$) in 4th and 7th day post transplantation

and finally the expression levels of IRF-7 mRNA was down regulated none significantly ($P > 0.05$) in 1st and 7th day but up regulated significantly ($P = 0.017$) in 4th day post transplantation.

Conclusions. Significant up regulation of IRF-1 mRNA levels in HBV-R patients may relate to inflammatory reactions and ischemic-reperfusion injury. Significant down regulation of IRF-3 gene expression in HBV-R patients may result of inhibitory effect of HBV proteins such as HBV-polymerase on IRF-3 expression and activation and inhibitory effect of HBV on innate immune responses may cause down regulation of IRF-7 in HBV-R patients.

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ABSTRACTS

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O 301

The Incidence of Acute Cellular and Antibody Mediated Rejection in Episode of Kidney Transplant Rejection

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Introductions. Transplant rejection after kidney transplantation is a common and important problem, which can be acute cellular or acute antibody mediated rejection (ACR or AMR). In this study, we investigated on the prevalence of AMR and AVR in rejection episodes.
Methods. In this retrospective study, 350 patients who underwent a kidney transplant in 2015 and 2016 were evaluated. The patients were checked regularly, and whenever creatinine or proteinuria increased, renal biopsy was performed. The incidence of AVR and AMR and its relation to gender, age and proteinuria was evaluated. To assess AMR, C4d staining was performed by immunofluorescence (IF) or Immunohistochemistry (IHC).
Results. Sixty four patients underwent kidney biopsy. Of these patients, 20 patients were female (31.3%) and 44 were male (68.8%). 14 (21.8%) patients had C4d positive. Only 5 patients (7.8%) had AMR and the rest, had both AVR and AMR. 48 patients (75.1%) in the biopsy showed evidence of AVR. Of these patients, 29 patients (45.3%) had only ACR and the rest, had ACR combined with AMR, focal segmental glomerulosclerosis (FSGS), IgA nephropathy and membranous glomerolonephritis (MGN). There was no correlation between genders or the amount of proteinuria (nephrotic or sub-nephrotic range) with prevalence of ACR and AMR ($P > 0.05$).
Conclusions. According to the results of this study, AMR is responsible for 21.8% of acute rejection episodes. The results of this study are consistent with results of similar studies (the incidence rate 20-48%). ACR is responsible for 75% of acute rejection episodes that in the 15/6% was associated with AMR. The prevalence of AVR is more than AMR and these two events may be excited at the same time.

O 302

Kidney Transplantation Registry Program in Mashhad University of Medical Sciences, Design and Rationale

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Introductions. Kidney transplantation was done in Mashhad transplant center for more than 20 years. The kidney transplant registry program in Mashhad, Khorasan Razavi, started on 2016. In recent years, about 160 kidney transplantation has been performed here annually, that consisted of both cadaveric and living donor programs. As transplant outcomes have not been systematically monitored, we try by registration of this group of patients, living donor and recipients, to analyze and share kidney transplantation outcome.
Methods. This registry is a prospective, single center, longitudinal program, designed as a dynamic observational cohort who enrolls all transplant recipients and donors. Demographic data, etiology of chronic kidney disease, and patient and graft survival were analyzed. The features of the registry are a flexible patient-case system that allows capturing all kidney transplant scenarios and collection of patient and allograft data on base and follow up visits. The dataset is designed and established using a two round Delphi method in two versions (minimum and extended), followed by a detailed data dictionary. Every decision has been made by a group of panelists specialized in nephrology and urology.
Results. Baseline characteristics, treatment data, patient and donor condition before and after surgery, potential clinical events including hospitalization, comorbidities and graft failure are all collected. Follow-up visits have been done in 1th, 3th months and every year after operation. Data quality is ensured by automatic software validation and a manual data review process. This

system helps us to complete data easier, and rapid statistical processing.
Conclusions. Totally, there are 30 kidney transplantation center in Iran. They perform 2500- 2700 kidney transplantation annually. Transplantation centers in Iran register using different forms. However our registry program was matched with Shiraz registry program. It is better the registration committee of the ISN-IRAN plan to establish a web registration system for whole of Iran.

O 303

The Role of FOXP3 Gene Expression in Kidney Allograft Survival

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Introductions. The main treatment for advanced renal failure patients is kidney transplant. Todays transplant rejection is a major problem. forkhead box P3 (FOXP3) is a member of the forkhead transcription factor family. Unlike other members, it is mainly expressed in a subset of CD4+ T-cells that play a suppressive role in the immune system. regulatory T (Treg) cells play a crucial role in the maintenance of immune tolerance. FOXP3 is considered as a suppressive cytokine secreted by regulatory T-cells. Probably, higher expression of this molecule can be related to increase of allograft survival time. The aim of this study was to investigate the association of FOXP3 gene expression with renal allograft survival time.
Methods. This case-control clinical study included 40 patients were divided into two groups: 27 patients with long-term allograft survival (with no history of rejection in more than 5 years after transplantation) and 13 patients with early graft failure. Blood samples were taken from patients. Total RNA were extracted from Buffy coats and cDNA were synthesized. FOXP3 gene expression was measured by Real Time PCR and compared in study groups.
Results. Statistical analysis showed that the expression of FOXP3 gene was significantly higher in patients with long-term allograft survival in comparison to patients with early graft failure and control group ($P < 0.01$).
Conclusions. Increase the expression of FOXP3 resulted in the survival of kidney transplant allografts.

O 304

Comparison of Clinical Outcomes and Drug Serum Levels in Three Doses of Cellsept (Mycophenolate Mofetile) as an Immunosuppressive Agent in Renal Transplant Recipients

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Introductions. The purpose of this study was to determine and to compare serum levels of 3 different doses of cellcept by measuring MPA_AUC1-3, and investigate its association with the transplantation outcomes such as rejection, infection and changing of kidney function in Iranian kidney transplant recipients in the first six months after transplantation
Methods. This study was a prospective study (Cohort study). 46 kidney transplant recipients during the first six months after transplantation participated in this study. They were divided into three groups according their daily cellcept dose (2 and 1.5 and 1 g/daily). Only two patients were in group 1 g/d who was excluded from study due to change of cellcept dose. Finally, the study performed on two groups. Limited sampling strategy was used at one, two and three hours after the morning dose of cellcept. Drug serum levels measured by HPLC method and MPA-AUC 1-3 were calculated and compared between groups. Patients were followed for three months for complications (acute rejection, infection, changing of kidney function or rising in creatinine level)
Results. Results showed no correlation between MPA-AUC and cellcept dose, sex and weight although it correlated with the time after transplantation and also correlated with C0 reversely. There was a significant correlation between MPA-AUC and infections but No correlation was found with rejection (although it

was not reliable due to limited number of rejection). Graft function didn't change significantly during three months follow up.

Conclusions. Since cellcept dose can't predict its serum level and since drug level impacts on post-transplant complications, it is better to adjust cellcept dose according to the MPA-AUC.

O 305

The Most Appropriate Perfusate PH for *Ex Vivo* Hypothermic Organ Perfusion, A Hypothesis

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Introductions and Hypothesis. Many studies have shown superiority of machine perfusion over static cold storage for allograft preservation. However, there are still many questions about machine perfusion working parameters including the optimal temperature of perfusion, the constituents of the perfusate including its pH, *etc*.

Normal intracellular protein structure and function depend on its conformational structure that in turn, depends on a constant, usually neutral, electrochemical environment. Acid-base regulatory systems provide, in most instances, a neutral intracellular milieu in which H^+ and OH^- concentrations are equal ($[H^+]/[OH^-] = 1$), hence, $pH = pOH = pK_w/2$. This condition preserves normal charged ionic states of cytosolic intermediary metabolites and maintains active sites of critical enzymes. But, neutral pH ($pK_w/2$) is only 7.0 at 25 °C.

With increasing temperature, pK_w (and neutral pH) decreases, so that keeping a neutral electrochemical intracellular state at 37 °C requires buffering systems that maintain intracellular pH around 6.85 (because pK_w at 37 °C is 13.7). This is facilitated by maintaining arterial blood pH at about 7.4. Blood and extracellular fluid are normally relatively alkaline to create an intracellular to extracellular H^+ gradient that allows unloading of acidic products of cellular metabolism from intracellular to extracellular space and blood. These values, however, are different at other temperatures. For example, to maintenance a normal intracellular milieu at 20 °C, the neutral intracellular pH is around 7.10 (not 6.85). To preserve such an intracellular pH, considering the relative alkalinity of extracellular fluid, the blood pH should be maintained at around 7.7 (not 7.4). We therefore, suggest maintaining perfusate pH at 7.7 for *ex vivo* machine perfusion of organs at 20 °C. In this way, the intracellular milieu is maintained in a neutral electrochemical state sparing cytosolic organelles from any unwanted stress, while they are working at lower pace due to hypothermia.

O 306

The Influence of Socioeconomic Status and Geographical Disparities in Long-term Outcomes of Iranian Patients After Liver Transplantation

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Introductions. Socioeconomic status and geographical disparities may influence outcomes of patients after liver transplantation. This study aimed to investigate the impact of socioeconomic status and geographical residence of liver recipients on short-term and long-term outcomes after liver transplantation.

Methods. In a cross-sectional study, we include adult patients who underwent liver transplantation between March 2012 and March 2015 at Shiraz Transplant Center, Shiraz, Iran. Information regarding monthly income, education status, place of living, mortality and early post- transplant complications were recorded and analyzed. Patients were categorized into those with < 12000000 Rials income (low income) and those with > 12000000 Rials income (high income).

Results. Totally 1015 patients were included. Mean duration of follow-up was 32.9 ± 15.7 months. Education, monthly income, living in border cities and rural areas were not associated with mortality and complications after transplantation ($P > 0.05$). The mean post-transplant survival was 49.8 ± 1.1 versus 45.6 ± 2.5 months in low and high

income groups respectively (P = 0.448). The post-transplant survival at 4 years was 83.2% ± 2.2% and 80.3% ± 4.9% in low and high income groups respectively. The mean post-transplant survival was 48.9 ± 1.1 months versus 49.1 ± 0.7 months in patients with and without college education (P = 0.950). The post-transplant survival at 4 years was 83.3% ± 2.2% versus 82.6% ± 1.5% in patients with and without college education. The post-transplant survival at 4 years was 82.7% ± 1.4% versus 84% ± 2.9% in patients living in urban and rural areas (P = 0.523). The mean post -transplant survival was 49.0 ± 0.7 months versus 49.5 ± 1 months in patients living in central and border cities respectively (P = 0.871).

Conclusions. Socioeconomic status and living area were not associated with long-term outcomes of Iranian liver transplant patients.

O 307

Nonalcoholic Fatty Liver Disease and Autoimmune Hepatitis as the Most Common Causes of Liver Cirrhosis Among Liver Transplanted Patients

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Introductions. Nonalcoholic fatty liver disease (NAFLD) is considered the hepatic manifestation of the metabolic syndrome. NAFLD incidence has been increasing in last decade among the general population. Autoimmune hepatitis is one of the most common causes of chronic liver failure. Autoimmune hepatitis is a wide variety of diseases including primary sclerosing cholangitis, primary biliary cirrhosis and overlap syndrome. Nowadays NAFLD and autoimmune hepatitis are the most common underlying cause of liver transplantation among adults under the age of 60.

Methods. This is a retrospective study of underlying diseases in 3348 consecutive liver transplants were performed from deceased donors in Shiraz transplant centre between May 1993 and December of 2016 among adult population. We compared the prevalence of different etiologies of liver cirrhosis in transplanted patients in different time periods.

Results. Between 1993 and 2004 the most common cause of liver cirrhosis was viral hepatitis including hepatitis B and hepatitis C virus. In second and third order were autoimmune hepatitis and NAFLD respectively. In time period from 2005 to 2016 the number one etiology of liver cirrhosis was autoimmune hepatitis. NAFLD and viral hepatitis were in second and third order respectively.

Conclusions. Autoimmune liver diseases and NAFLD are increasing in incidence in general population. The rising prevalence of NAFLD is a direct consequence of obesity epidemic and the associated increase in prevalence of diabetes and metabolic syndrome. In future NAFLD is the leading cause of liver cirrhosis.

O 308

Psychological Evaluation in Liver Transplantation, The Assessment of Psychological Profile of End Stage Liver Disease Patients Before and After Transplantation

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Introduction. Patients with end stage liver disease (ESLD) face various psychological challenges. We aimed to compare patients' level of depression, anxiety, fatigue, sleepiness, and memory, pre and post transplantation.

Methods. Patients were recruited from liver transplantation clinic affiliated with Shiraz University of Medical Sciences. Patients between 18 and 60 years old with education of at least 6 grades were included in the study and those with severe psychiatric problems, were excluded. Pre- and 1-month post-liver transplant assessment measures were: Hospital Anxiety and Depression questionnaires (HADS), California Verbal Learning Test (CVLT), Epworth Sleepiness Scale, and Fatigue Severity Scale. Pair sample t-test was used. P value of less than 0.05 was considered as significant.

Results. Patients' level of depression increased after

transplantation (7.42 vs. 8.42; P value = 0.008). We found improvement in all categories of immediate memory (65.23 vs. 60; P value = 0.007); short delay free recall (10.52 vs. 12.52; P value = 0.000); short delay cued recall (11.42 vs. 13.00; P value = 0.001); long delay free recall (10.80 vs. 12.50; P value = 0.003); long delay cued recall (11.80 vs. 13.25; P value = 0.003) and recognition (14.65 vs. 15.42; P value = 0.003). Patients' level of fatigue and sleepiness decreased (39.9 vs. 33.2; P value = 0.029 and 10.8 vs. 7.8; P value = 0.004). Patients' level of anxiety did not change significantly (12.6 vs. 12.8; P value = 0.642).

Conclusions. We observed higher level of depression, improved fatigue, sleepiness and memory function in post liver transplant patients. No significant change in patients' level of anxiety was seen.

O 309

Erythrocytosis After Orthotopic Liver Transplant; The Prevalence, Cofactors, and Outcomes

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Introductions. Post-transplant Erythrocytosis (PTE) is a non-intrinsic persistent elevation of hemoglobin to a level greater than 18.5 g/dL for a man or 16.5 g/dL for a woman. Although, there is a well-defined association between erythrocytosis, rise in blood viscosity, risk of thrombosis, and death, but the prevalence and contributing factors of PTE in liver transplant patients have rarely been studied. We aimed to determine the incidence rate of this complication after orthotopic liver transplantation and to discuss the previously published predisposing factors.

Methods. A total of 116 adult patients were consecutively recruited from June 2013 to December 2016. Once the hemoglobin value exceeded the threshold, the patient was included for further analysis. The exclusion criteria were any symptoms of pre-transplant erythrocytosis, kidney or respiratory failure, and diagnosis of a malignant or non-malignant tumor. In case of persistent outrange for one particular patient, focused examination at the hematology department was performed to establish the form: primary, secondary or idiopathic.

Results. Idiopathic erythrocytosis was reported in 4 male patients (2 cases with a history of cryptogenic cirrhosis, 1 case of hepatitis B infection, and 1 case of Wilson's disease). Erythrocytosis appeared in all patients from the third to sixteenth month after transplantation. At the time of diagnosis, 2 patients were on Tacrolimus and Mycophenolate Mofetil therapy and 2 were on Tacrolimus and Prednisolone. The patient with the history of viral hepatitis periodically received hepatitis B immune globulin (2500 units per 15 days). Stable graft function was obvious in all patients. Controlled administration of anticoagulant agents resulted in no cardiovascular events.

Conclusions. In contrast to the recently published experimental study, no significant association was observed between hepatitis B infection and erythrocytosis. But male gender may be considered as an important cofactor. More studies should be conducted to distinguish the pathogenesis and risk factors.

O 310

Study on Changes of Serum Vitamin C Levels in Brain-Death Organ Donors

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Introductions. Inflammatory events following brain death (BD) decrease quality of donor organs, which can affect the outcome of transplantation. Vitamin C (ascorbic acid (AA)) is an essential nutrient with potent antioxidant properties. AA may protect from dysregulation of the immune-inflammatory response by its antioxidant properties. Although AA behaves not only as an antioxidant but also as a pro-oxidant. This effects of exogenous antioxidants as AA on cellular responses , including oxidative metabolisms and inflammatory processes ; depending on their concentrations. Changes in serum levels of AA following BD are still unknown.

The aim of this study was to assess changes in serum AA levels in brain dead donors (BDDs) in the time elapsed between BD diagnosis and immediately before organ procurement

Methods. Serum AA level was measured two times in 37 BDDs , on admission (R1)and immediately before organ procurement (R2). Standard management based on recommendation of UNOS was performed for all the BDDs. The change of these values (R1-R2) were analyzed regarding BDDs parameters (age ,gender, cause of death, hemoglobin level and types of blood group, and interval between the two sampling).

Results. Twenty three men and 14 women with mean ± SD age of 26.48 ± 17.98 years were included in this study. Traumatic brain injury was the most common cause of BD (40.5%). The mean ± SD hemoglobin level ,and interval between the two sampling was 11.95 ± 3.21 g/dL and 40.09 ± 12.10 hours respectively. The most common types of the donor's blood group was A positive. No significant differences was observed between Serum AA level on R1 and R2 (P = 0.985). The BDDs parameters did not significantly affect R1-R2 values.

Conclusions. Serum AA level, in contrast to cytokines, is not significantly affected in BDDs. The most effective dose of AA and the best time for its administration should be determined in future studies.

O 311

Update in Causes of Family Refusal for Organ Donation, Reporting the Changes Over 6 Years

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Introductions. After significant improvement of family consent rate to organ donation in recent years due to increase in cultural activities and social awareness, the plateau has been reached. This study was performed to detect responsible causes of this plateau.

Methods. We reviewed exact causes of family refusal after providing a list of failed potential donors from July 2015 to December 2016. The expert coordinators responsible for handling the failed cases chose the cause of refusal from the previously prepared list. The list was checked again by contacting the non-donor families by phone. The results were compared to those obtained from similar group of families in 2009.

Results. In a 1.5 years period of organ donation practice, 353 potential brain dead organ donors referred to our organ procurement unit. Mean age of the cases was 42.6 and 62% were male. Main causes of brain death were cerebrovascular accident and trauma (41.2% and 32.6%). Family consent rate was 84.4% and 55 families rejected the request for organ donation. Leading cause of family refusal was religious believes which came from Sunni families mainly. (43.6% in comparison to 8.6% in 2009). "Brain death denial" reduced significantly from 44.4% in 2009 to 12.7% in 2015-2016. (P-Value < 0.001 for both causes). "Opposite donor wishes", "unstable family mood", "belief of body integrity" and "expectation of a miracle" were the other causes which had no reportable change.

Conclusions. After massive social activities in media in order to enhance social awareness regarding brain death and organ donation, people nowadays do not doubt about irreversible death like the past. However, noticeable rise of consent rate, has made the little religious cause of family refusal prominent. Therefor this cause seems to be the next barrier to fight against, which needs careful approach to religious leaders and societies.

P 301

The Effect of Angiotensin II Receptor Type 1 Antibody on Allograft Function

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Introductions. Non HLA antibodies has been introduced as an independent risk factor for acute rejection in renal transplant patients (RTx). Among these antibodies,angiotensin II type-1 receptor (AT1R) antibodies with agonistic action on renin angiotensin system can induce various effects due pathologic function of RAS system. Clinical importance of this antibody on RTx function has not properly explained.
Methods. We designed a cross sectional study to evaluate the effect of ATR1 Ab on allograft function and hypertension in stable RTx recipients.
Results. Study group was consisted of 81 (47 males, 34 females), zero HLA matched recipients with stable renal transplant function. Mean age of patients were 51.1 ± 11.9 years with Tx duration of 83.5 ± 6.5 months. All data collected from patient's chart and blood samples were sent to a reference lab. eGFR was calculated by CKD-EPI formula and Anti AT1R level measured by Eliza method (Eastbiopharm company). The result considered positive,if Anti AT1R level was more than 17 units/ml. Among 81 recipients 18.5% (15) had high anti AT1R level. Patients with low titers of anti AT1Rhad better allograft function in comparison to recipients with high anti AT1R level. eGFR (cc/min) and serum creatinine (mg/dl) were 63 ± 13.7, 1.2 ± 0.21 to 42.3 ± 13.9, 1.7 ± 0.43 consequently ($P < 0001$). We didn't find any correlation of high anti AT1R level to hypertension, ESRD cause, age, gender, Tx and dialysis duration, CMV infection, antihypertensive and immunosuppressive drugs.
Conclusions. We conclude that high titers of anti AT1R > 17unit/ml is a risk factor for allograft function. Hypertension was not correlated to AntiAT1R level in our study. It seems that monitoring of anti AT1R level can predict allograft outcome.

P 302

Obesity, a GrowingRisk Factor of CKD in Amol Cohort

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Introductions. During past decades the epidemiology of chronic kidney disease (CKD) has changed from infectious disease to metabolic disorders in developed countries. Unfortunately, it seems that developing countries experience this change faster than predicted rate to make a program to confront it. AMOL cohort has shown different aspects of metabolic disease on cardiovascular and liver disease in Mazandaran province of Iran. In this study we checked for prevalence and risk factors of CKD in this large population.
Methods. We performed a large scale cross sectional study in 3359 participants on AMOLcohort in 2016. All demographic data, blood and urine samples were collected during interview. Albumin to creatinine ratio was measured in all cases. If the ratio was more than 30 mg/g,we confirmed the results by a24 hours urine for albumin. CKD defined if urine albumin was more than 30 mg/24 hours or GFR less than 60 cc/minute based on CKD-EPI formula.
Results. There were 59.3% male and 40.7% female. The mean age of patients was 44.8 (range: 14-90) years. The prevalence of BMI > 30 kg/m^2, smoking,diabetes mellitus,hypertension,elderly population (age > 65 Yrs.), analgesic consumption, renal stone and ischemic heart disease were 32%, 24.9%, 10.1%, 20.8%, 13.3%, 6.3%, 1.3%, 7.1% consequently. CKD prevalence was 25.5% (stage 1&2:% 8.5, stage 3: 16.4%, stage 4: 0.4% and stage 5: 0.1%). Diabetes Mellitus RR:1.8 (CI:1.58-2.07),renal stone 1.99 (1.47-2.69)hypertension 1.59 (CI:1.39-1.78),elderly population RR:1.51 (CI:1.32-1.73), obesity RR: 1.3 (CI:1.16- 1.46) and low HDL 1.21 (1.01-1.27) (were significant risk factors for CKD ($P < 0.001$) in logistic regression analysis.
Conclusions. Diabetes mellitus, hypertension, aging are well-known risk factors of CKD but the new fast growing risk factor in this century is obesity. We found obesity prevalence of 30% in our study population that increases 1.3-fold risk of CKD in our study population. Special consideration and programming is a need for every country to control the social side effect of growing rate of metabolic disorders.

P 303

Effect of Remote Ischemic Preconditioning on Incidence of Acute Kidney Injury in Patients Undergoing Coronary Artery Bypass Graft Surgery

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Introductions. Acute kidney injury (AKI), a common and serious complication of coronary artery bypass graft (CABG) surgery with cardiopulmonary bypass (CPB), is associated with inflammatory reactions and ischemia-reperfusion injury. Remote ischemic preconditioning (RIPC) which is transient ischemia and reperfusion of a limb, is reported to reduce the risk of CPB-associated myocardial and acute kidney injury, but uncertainty remains.

Methods. We conducted a prospective, double-blind, randomized, controlled trial at the Namazi hospital, Shiraz, Iran, between November, 2013, and February, 2016. 177 adult patients undergoing elective or urgent on-pump CABG surgery were randomly assigned to either RIPC group (n = 87) or control group (n = 90). The patients in RIPC group received three cycles of 5 min ischemia and 5 min reperfusion in the upper arm after induction of anesthesia. We placed an uninflated cuff on the arm for 30 min in the control group. The primary end point was incidence of acute kidney injury defined as an elevation of serum creatinine of ≥ 0.3 mg/dl or ≥ 50% within 72 h after surgery. Secondary end points included duration of hospital stay and death.

Results. There was no significant difference in the incidence of AKI between groups (38 patients [43.7%] in the RIPC group and 41 patients [45.6%] in the control group, $P = 0.80$). No significant differences between groups were seen in the duration of hospital or intensive care unit stay, and in-hospital mortality.

Conclusions. RIPC did not reduce the incidence of AKI in patients undergoing on-pump CABG surgery.

P 304

Which E-Learning Methods Can Improve Knowledge and Satisfaction of Intensive Care Nurses About Brain Death and Organ Donation

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Introductions. Virtual education can be delivered via different routes. One of the most important things that critical nurses should be learn about it, is issues related to brain death and organ donation. The purpose of this study was to investigate the effectiveness of interactive and non-interactive virtual educations about brain death and organ donation on knowledge and satisfaction of intensive care nurses.

Methods. This quasi-experimental study was conducted on intensive care nurses of hospitals affiliated to Tehran University of Medical Sciences in 2014. Participants were selected through a convenient sampling method and were assigned into two groups with 32 participants in each. The first group participated in an interactive electronic education; while the second group received a non-interactive education about brain death and organ donation. Knowledge of both groups was measured before and after the education. The satisfaction of participants with the course was measured using a questionnaire. The scores were compared within and between groups using the paired and independent t-test, respectively.

Results. Before implantation of e-learning, pretest score showed average knowledge about brain death and organ donation was moderate in two groups (7.19 ± 1.35 in interactive group and 7.31 ± 2.48 in non-interactive group) (no significant difference). The knowledge of both groups about brain death and organ donation increased significantly after the intervention ($P < 0.001$) (10.91 ± 2.53 and 11.72 ± 2.46 in interactive and non-interactive

e-learning groups respectively); however, there was no significant difference between the mean scores of the two groups after the education ($P < 0.05$). The satisfaction with the course was significantly higher in the interactive education group ($P = 0.04$).
Conclusions. Both interactive and non-interactive electronic educations increased the knowledge of nurses. The nurses were more satisfied with the interactive education. This issue can helps to increase of nurse tendency to participating in e-learning education. Further studies are recommended.

P 305

Mashhads Trend of DD PMP

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Introductions. Solid organ transplant has been impressive in recent decades. In recent years, Deceased donor transplant has had an increasing trend due to macro politics of ministry of health. This trend has been significant in medical science of Mashhad University and just in five years the rate of PMP has improved from 11 to 20. Therefore, before 2012 kidney donation from deceased donor has constituted just 30 percent of Mashhad university kidney transplants but in 2017, the source of about 82 percent of all kidney transplants was deceased donors.
Methods. In order to increase organ donation from deceased donor in medical science of Mashhad University, important decisions have been taken including: 1. Centralizing OPU in special organ transplant and hemodialysis of Montaserieh hospital. 2. Designing a plan and utilize special personnel such as telephone inspector, attentive inspector in ICU. Holding educational courses for deputy treatment, head and managers of hospitals, emergency medicine and anesthesia residents, ICU head nurses, CCU head nurses and hospitals emergencies.
Results. The rate of PMP from deceased donors from 2002 to 2012 has increased from 5/1 to 11 and from 2012 to 2017 has increased from 11 to 20 due to these strategic politics.
Conclusions. We can achieve to fix and increase the rate of PMP if we designed a strategic program and plan determination and duties for all process owners of complex organ donation process from deceased donors.

P 306

Electrolyte Disorders During Vancomycin Treatment in Hospitalized Patients at Hematology-Oncology Wards of Namazi Hospital in Shiraz

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Introductions. Increased serum creatinine level and decreased glomerular filtration rate are the major features of vancomycin nephrotoxicity. Electrolyte disorders of this agent have not been considered in relevant clinical studies so far.
Methods. The aim of the present study was to determine potassium and magnesium disorders in patients with hematologic and oncologic diseases under vancomycin treatment. A cross-sectional, observational study was performed during 9 months at three hematology-oncology wards of Namazi hospital in Shiraz. Patients > 18 years with no documented history of acute kidney injury or chronic kidney disease planned to receive vancomycin for at least 1 week were recruited. Urine samples for determining creatinine, potassium, and magnesium levels were collected at days 0, 3, 5, 7, 10, and 14 of treatment. Hypokalemia and hypomagnesemia was defined as serum potassium and magnesium level below 3 mEq/L and 1.2 mEq/L, respectively.
Results. Two-fifth (40.38%) of the study population developed hypokalemia during 2 to 3 days after initiating vancomycin. Hypomagnesemia was detected in 5.77% of vancomycin recipients with the time onset of 7.67 ± 3.21 days. The mean ± standard deviation of potassium supplement was significantly higher in patients with than those without hypokalemia ($P = 0.006$). No case of renal

potassium and magnesium wasting was identified. Amphotericin b co-administration significantly associated with hypokalemia during vancomycin treatment (odds ratio = 0.164 [95% confidence interval = 0.041-0.647], P = 0.01). In contrast to hypomagnesemia, hypokalemia occurred commonly during the first days of vancomycin treatment.
Conclusions. The real casual relationship, mechanism, and clinical outcome of these electrolyte disorders in vancomycin recipients remain unclear.

P 307

Assessing the Epidemiology of Nephrotoxicity and the Role of Urinary Kidney Injury Molecule 1 as a Biomarker of Renal Function in Hematologic-Oncologic Patients Under Vancomycin Treatment in Shiraz, Iran

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Introductions. Nephrotoxicity is a common adverse effect of vancomycin. However, some aspects of vancomycin nephrotoxicity have not been studied well in the Iranian population. Serum creatinine as a classic marker of renal function has several limitations in clinical practice. To determine the incidence, time onset, and possible associated factors of vancomycin nephrotoxicity, and compare the patterns and the accuracy of the correlation between urine kidney injury molecule 1 (KIM-1) and vancomycin nephrotoxicity with that of serum and urine creatinine during vancomycin treatment
Methods. A longitudinal study was performed during 9 months from August, 2015 to April, 2016 at three hematology-oncology wards of the Namazi Hospital in Shiraz, Iran. Patients > 18 years with no documented history of acute kidney injury or chronic kidney disease scheduled to receive vancomycin for at least 1 week were recruited. Required demographic and clinical data of patients were gathered. Serum, as well as urine creatinine and urine KIM-1, were determined at days 0, 3, 5, 7, 10, and 14 of vancomycin treatment
Results. Thirteen out of the 52 recruited patients (25%) developed nephrotoxicity, with a mean ± standard deviation onset of 11.46 ± 7.56 days. Furosemide co-administration (odds ratio = 0.126, 95% confidence interval = 0.023-0.694, P = 0.017) was significantly associated with vancomycin nephrotoxicity. Vancomycin nephrotoxicity resolved spontaneously in about two-fifths (38.46%) of the affected individuals. Mortality (P = 1) and duration of hospitalization (P = 0.175) were comparable between patients with and without nephrotoxicity. Urine KIM-1 increased during vancomycin treatment, but its mean values did not differ significantly within (P = 0.070) or between (P = 0.179) patients with and without nephrotoxicity. Urine KIM-1 accuracy in detecting vancomycin nephrotoxicity was significantly lower than that of serum creatinine at days 5, 7, and 10 of treatment.
Conclusions. Vancomycin nephrotoxicity is common but usually reversible and has readilymanageable adverse effects. Urine KIM-1 was not more accurate than serum or urine creatinine in detecting vancomycin nephrotoxicity in our study population.

P 308

Hospital-Based Study of Clinical Features and Outcomes of ParaquatNephrotoxicity, In Lorestan, Iran

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Introductions. Paraquat (1, 1-dimethyl-4, 4-bipyridylium chloride) is atoxin (herbicide). Deaths from ingestion have been more commonly due to suicide and homicide. Human tissue toxicity likely results from an oxidative mechanism. After oxidative destruction, recruitment of inflammatory cells exacerbates injury. The lung and kidney are the primary target organs in paraquat toxicity. Toxicity in the kidney, often leading to acute tubular necrosis, which may occur soon after ingestion (within 24 hours).
Methods. Because of little data, the aim of study was evaluation of nephrotoxicity due to paraquat in IRAN. this descriptive, cross sectional study was conducted on all patients with paraquat toxicity

from January 2015 to January 2017, in lorestan province (west of Iran). Demographic data of all patients, BUN –Cr – Na –K – urinalysis –urine volume –PH – HCO3 – Pco2 and volume of digested toxin, were measured (during admission days). AKI defined by RIFLE criteria. For confirmation of paraquat toxicity, we consulted with a specialist in toxicology. Statistical analyses were then performed using SPSS software.

Results. Finally, 24 patients were included in our study. Out of all patients, 15 (62.5%) were male and 8 females. Mean ages of patients were 22.2 years old. AKI had developed in 13 (56/52%) of subjects, that only 3 cases had complete recovery (all of the otherpatients died). Mean serum Cr was 4.5mg/dl (range: 2.5 -9 mg/dl). Maximum intervals for AKI recovery was 7 days. Minimum dose of toxin digestion was 10-15 cc. Mean level of K were 3.36 meq/l (+/- 0.5). About ABG parameters, acidosis or alkalosis occurred only in 2 cases (during first 48hr). The most common abnormalities in urinalysis were glucosuria and proteinuria. Statistically significant associations were found between outcome of AKI and the dose of toxin ($P = 0.001$), serum creatinine levels ($P = 0.001$).

Conclusions. Non-oliguric renal failure is a common problem in paraquat poisoning. creatinine level, more than 2 mg/dl is a poor prognostic factor for recovery of AKI) $P < 0/05$). We suggest that proximal tubule is main site of injury. Only hemodialysis is not enough for complete management of patients. We recommend more studies in future for better management of paraquatnephrotoxicity. Early referrals, absence of respiratory or liver dysfunction and less volume of paraquat digestion are important factors for recovery of kidney function.

P 309

Berardinelli-Seip Congenital Lipodystrophy (BSCL) with FSGS and a Novel Mutation in AGPAT2 Gene

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Introductions. Berardinelli-Seip congenital lipodystrophy (BSCL) is a rare autosomal recessive disorder which is determined by lipoatrophy,dyslipidemia especially hyper -trigeliceridemia and low HDL, acromegaloid feature,hepatomegaly, and insulin resistance which leads to overt diabetes mellitus during the second and third decades of life. We describe a 15 year- old girl with Berardinelli-Seip syndrome presenting with diabetes mellitus and FSGS simultaneously.

Case Report. We report a 15 years old girl with manifestation of Berardinelli-Seip syndrome and FSGS and a new mutation in AGPAT2 gene.

Conclusions. This Syndrome has poor outcome prognosis which leads to death during second or third decades of life due to complications of diabetes mellitus, atherosclerosis and liver failure.

P 310

Oral Candida Albicans Colonization in Solid Organ Transplant Patients, Nemazi Hospital, Shiraz, Iran

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Introductions. Candida albicans is a common cause of infection in solid organ transplant recipients. Oral Candida colonization was reported in this population. The aim of the study was to determine the prevalence of oral Candida albicans colonization rates and their susceptibility patterns to antifungal agents in solid organ transplant patients.

Methods. Clinical samples were obtained from the patients before using fluconazole prophylaxis. Sterile swabs from oral cavity of transplant patients were cultured on sabouraud dextrose agar containing chloramphenicol. Candida albicans was identified by the RFLP method using ITS1 and ITS4 primers and MspI enzyme. Their susceptibility patterns to 7 important antifungal agents were determined using microdilution susceptibility test by CLSI M27-A2 method.

Results. In total, 111 patients were screened and

Candida albicans was isolated from 54 recipients. MIC90 values for Amphotericin b, Caspofungin, Voriconazole, Fluconazole, Posaconazole, Itraconazole and Ketoconazole were 2.0, 0.25, 0.016, 0.5, 0.016, 0.064, 0.016 µg/ml, respectively.
Conclusions. Candida spices in oral cavity can present as a reservoir for future infection in immunocompromised patients. Therefore, the determination of susceptibility patterns of colonized fungi isolated from transplant patients could be helpful for the treatment and prevention of the systemic fungal infections.

P 311

Office Measurement of Blood Pressure by Automated Method in Patients with Chronic Kidney Disease

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Introductions. 24-hour ambulatory blood pressure monitoring (ABPM) which is the standard method for monitoring blood pressure (BP) in CKD patients is cumbersome and time consuming. The accuracy of automated in which multiple measurements are performed in office by a specific device and the average of readings recorded, have not been yet studied in patients with CKD.
Methods. This study was performed on 64 patients with CKD stages 3 and 4 who referred to Shiraz Motahari Nephrology clinic during 2016. Firstly, BP was measured by mercury sphygmomanometer by a nurse and then by Microlife automated equipment from the hand with higher BP. The average of recordings by the automated device which was three times with one-minute intervals were recorded. In the next step, 24-hour ABPM was done for the patients. Then, the mean systolic and diastolic BPs were compared between the 3 methods and the mean differences of both office methods with awake ABPM results as the gold standard.
Results. The mean ± SD age of the participants was 59.32 ± 13.26 years with male-dominancy (60.9%). The mean ± SD systolic BP of the three methods was for manual, automated and the awake ABPM was 156.64 ± 17.81, 148.81 ± 18.65, and 140.03 ± 19.42 mmHg, respectively. The mean diastolic BP was 88.90 ± 13.22, 84.12 ± 14.04, and 78.45 ± 13.24 mmHg. There was a significant difference between three methods ($P < 0.001$ for all). The mean difference between manual office BP and the awake ABPM was 16.4 mmHg (95% CI 12.6 to 20.1) for systolic and 10.3 mmHg (95% CI 7.6 to 13) for diastolic BP ($P < 0.001$ for both). The mean difference between the automated office BP and mean awake ABPM for systolic BP was 8.6 mmHg (95% CI 4.3 to 12.8) and for diastolic BP was 5.5 mmHg (95% CI 3.3 to 7.7) ($P < 0.001$ for both). The mean difference between systolic manual office BP and systolic ABPM was significantly greater than that for the difference between systolic automated office BP and the ABPM (16.4 vs 8.6 mmHg) ($P < 0.001$).
Conclusions. Although the automated method of BP measurement could not replace the ABPM in CKD patients, however it was more accurate than the manual conventional method in the office setting.

P 312

Effect of Dipyridamole on Serum and Urinary Phosphate in Sporadic Adult onset Osteomalacia, Case Report

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Introductions. Hypophosphatemia can be induced by decreased intestinal absorption, increased renal wasting, or shifting to the cells. Urinary phosphate wasting can be due to hyperparathyroidism, renal tubular defect, or both. The normal response of kidneys to hypophosphatemia is reduction in phosphate excretion, that it is less than 100mg/day. Most of patients with hypophosphatemia are asymptomatic. However, in severe cases it is associated with myopathy and weakness and bone disorders such as osteomalacia and rickets. Here, we report a case of sporadic adult-onset hypophosphatemicosteomalacia caused by renal phosphate wasting that surprisingly responded to Dypridamole.
Case Report. This is a 38-year-old woman, who was sent to us for low back pain, diffuse muscular and

joint tenderness from 1 year ago that lead to inability to walk and usng wheelchair from 6 months ago. During this period, she received active Vitamin D (Calcitriol 0.75mcg/day), oral Calcium carbonate (1g/day) and Eff Phosphate (3.872g/day), but there were ineffective. She also had femoral Osteoporosis. In the X-ray evaluation, she had bilateral looser zone in both Femors and Tibias. Laboratory data before and after taking Dypridamole are shown in Table1. It should be noticed that she was evaluate for mesenchymal tumor by Somatostatin receptor scan that was negative. Before Dypridamole After DypridamoleCalcium (mg/dl) 8.5 9.2 Phosphate (mg/dl) 2.4 4.2 ALP (U/L) 155 222 PTH (pg/ml) 69 30.3 25 (OH)D3 (ng/ml) 16 40.7 Urinary Ca (mg/24h) 90 89.7 Urinary PO4 (mg/24h) 630 120 Now after 1 year following this treatment, she can walk and go to the gem. Oral administration of phosphate and activated vitamin D together with dipyridamole relieved the persistent pain and weakness, and she became fully ambulatory.
Conclusions. These data suggest that dipyridamole, a drug with few adverse effects, may be a useful therapy for hypophosphatemia due to phosphaturia.

P 313

Factors Associated with Short-Term and Long-Term Survival in Patients Undergoing Hemodialysis Using Cure Models

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Introductions. Understanding the factors affecting the survival of patients undergoing hemodialysis is the mainstay of care in this population. In contrast to traditional survival analysis models, we aimed at finding these features using cure models which discover factors important in both long term and short term survival of patients undergoing HD.
Methods. Data were retrospectively collected from the database of Shiraz University of Medical Sciences (SUMS) Special Diseases Administration including a complete dataset of patients of 34 HD centers affiliated to SUMS in Iran during March 2011 to March 2016. Primary outcome was death. If we consider people who had not experienced the death event as cured, the rest of the patients are uncured. In order to evaluate the factors affecting mortality in patients undergoing HD, we used cure models which is modeling both long-term and short-term survival of patients separately as well as finding the estimated cure rate. We excluded data of the initial 3 months on HD.
Results. From 549 eligible patients, 411 (74.9%) of them were the long-term survivors. The estimated cure proportion in the different models was between 67.4% and 77.2% such that have slight difference with empirical value (74.9%). Sex, BMI, serum albumin, Uric acid, MCHC, LDL, and phosphate have recognized as important factors in determining the probability of being a long-term survivor whilst the effective factors on short-term survival were BMI, LDL, and ($P < 0.05$).
Conclusions. We found that by using cure model survival analysis, the factors that have effect on the proportion of the HD patients who experience long-term survival might be different from those affecting short term survival.

P 314

Prevalence and Risk Factors of Proteinuria After Kidney Transplantation

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Introductions. The prevalence of proteinuria in various reports, has been different. Given that proteinuria after kidney transplantation is related to chronic rejection and increased risk of cardiovascular complications, Identification and studying the factors associated with proteinuria are very important.
Methods. Patients who went under a kidney transplant at the hospital in 2016 in the Montaserieh hospital were enrolled. Proteinuria was considered a 24-hour urine protein excretion of ≥ 500 mg.

the relationship of factors such: age, sex, type of donation (cadaver or living), hypertension, delay graft function and rejection with incidence of proteinuria was evaluated.
Results. In this study, 173 recipients were evaluated, 53% male and 47% female, mean age 35 years, 72% cadaver. The prevalence of proteinuria after transplantation was 21.7%. High blood pressure, history of acute rejection and male gender were associated with a higher prevalence of this complication. There was no association between proteinuria and the type of kidney transplant and age.
Conclusions. According to this study, Prevalence of proteinuria after kidney transplantation was 21.7%. Hypertension and male gender were associated with higher prevalence of this complication. According to proteinuria associated with chronic rejection and a higher incidence of cardiovascular complications, this complications and risk factors should be identified and treated as soon as possible.

P 315

Constrictive Pericarditis After Renal Transplantation, a Case Report

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Introductions. Constrictive pericarditis (CP) rarely complicates patients with transplanted kidney. Usually, CP diagnosis is delayed and may be results in graft dysfunction. some cases may be have symptoms that are mysterious.
Case Presentation. We report a 50-year-old male patient that underwent kidney transplantation two -years- ago. He was on hemodialysis since five-years before transplantation (because of hypertensive nephropathy). Kidney GFR was near to 55 cc/min/24hr, during 6 months after transplantation. Her complaint was abdominal distention due to new refractory ascites (six months after transplantation) and no dyspnea. Laboratory data showed clear colored ascites with high protein and high SAAG fluid. Common causes for ascites were excluded. He was referring to the multiple centers without definite diagnosis. Ultimately, CP diagnosis was suspected because of fluid analysis and resistance to diuretics and confirmed by cardiac catheterization and MRI that calcification was seen in pericardium. pericardiectomy was performed, which resulted in full resolution of ascites. Bacteriologic study failed to demonstrate tuberculosis in specimens.
Conclusions. Nephrologists must notice to complaints and probably new diseases in transplanted patients for better survival of grafts. In selected cases, cardiologist consultation in patient with ascites is recommended. Refractory ascites may be due to constrictive pericarditis.

P 316

Interferon-γ Gene Expression During Polyomavirus BK Infection in Kidney Transplant Patients

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Introductions. Polyomavirus BK infection is a risk factor after kidney transplantation may lead to multiple clinical outcomes including: renal transplant dysfunction and allograft loss. Reactivation of polyomavirus BK is the consequence of potent immunosuppression in kidney transplant patients and it can lead to polyomavirus BK associated nephropathy (PVAN) in up to 10% of patients. Delayed treatment of PVAN results in high risk of graft loss. On the other hand, antiviral immunoregulatory markers like Gamma interferon (IFNγ) can affect the polyomavirus BK pathogenesis. IFNγ has a major role in antiviral host defense, graft rejection, and regulative of the adaptive immune responsive. Therefore, in this study, the possible association between polyomavirus BK infection with IFNγ gene expression was evaluated.
Methods. Presence of polyomavirus BK infection was evaluated using Real time (Taq Man) PCR in 270 kidney transplant patients admitted to Namazi Hospital affiliated to Shiraz University of medical sciences, Shiraz, Iran. IFN-γ mRNA gene expression was determined using Real time PCR (SYBER Green) in patients with and without polyomavirus BK infection compared with healthy controls. The rate of gene expression was calculated

using the Livak (2 −ΔΔCT) method.
Results. The polyomavirus BK infection was found in 8.5% kidney transplant patients. The mRNA expression level of IFNγ was significantly higher in patients with and without viral infection vs healthy controls. This increase was measured to be more than 58.47 and 4.62 fold in polyomavirus BK infected and non-infected patients compared with healthy controls, respectively (P = 0.002).
Conclusions. Polyomavirus BK infection can induced over expression of IFNγ gene in kidney transplant patients. These results emphasized on the important role of IFN-γ in polyomavirus BK pathogenesis needs to confirm in larger population with longer follow up which may help to develop therapeutic or preventing assays to suppress polyomavirus BK infection.

P 317

Nutcracker Syndrome, A Case Report and Review of Literature

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Introductions. Nutcracker syndrome caused by nutcracker phenomenon [i.e., entrapment of left renal vein between superior mesenteric artery (SMA) and aorta] is manifested by different presentations from mild microscopic hematuria to significant and even gross hematuria with or without flank pain, orthostatic proteinuria and pelvic or genital varices.
Case Report. A 12-year-old boy was admitted with diagnosis of post-infectious reactive arthritis after dysentery. His urinalysis showed isolated microscopic hematuria which continued with significant and even gross hematuria and flank pain after discharge. Laboratory studies including urine study for RBC dysmorphic & RBC cast, proteinuria, hypercalciuria, hyperuricosuria, hyperoxaluria were negative. K.U.B, abdominopelvic CT scan with and without contrast and cystoscopy were normal but spiral renal CT angiography with IV contrast media showed trapping of left renal vein between SMA and aorta. Surgical consultation recommended surveillance therapy and after a while his hematuria decreased.
Conclusions. Nutcracker syndrome should be considered in differential diagnosis of hematuria after exclusion of other causes.

P 318

First Report of Polyuria Caused by Botulism, A Case Report

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Introductions. Botulism is a neuroparalytic illness caused by botulinum toxin which come from the bacterium Clostridium botulinum. It is known as an acute disease that paralyzes the body in descending order. Foodborne botulism is serious disease with high fatality potentially. Very few reports in the literature describing kidney damage in botulism. We report a case of botulism following by polyuria an unexpected complication.
Case Presentation. A 36-year old male with no significant past medical history patient presented to the hospital with problem in swallowing and speaking with no history of hypertension, diabetes or addiction. The diagnosis of botulism was confirmed by clinical signs and symptoms. Moreover, Botulinum toxin was also extracted from stool and salty eaten food samples. Polyuria was observed in the first 9 days after admission. Remission was achieved a week after the start of treatment. The reported case in this article was experiencing polyuria after botulism poisoning and hypokalemia which is not a common side effect of botulism in medical text books.
Conclusions. The presented case was polyuric patient caused by botulism poisoning. It may induced not only by kidney damage and excretion of sodium but also by partial nephrogenic or central diabetes insipidus.

P 319

Measuring mRNA Transcripts of FOXP3 and IL-2 Genes in Peripheral Blood of Patients with Chronic Renal

Hemodialysis Compared to Normal Individuals, Using Real Time PCR

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Introductions. Chronic hemodialyzed patients suffer from failure of the defensive immune system which causes their susceptibility to infections and malignancy. One of the cellular- molecular mechanism for immune incompetence in these patients is the disturbed function of regulatory T cells. Regulatory T cells which specifically express the transcription factor FoxP3 and alpha chain of IL2 receptor, suppress the immune response by various mechanisms. High level of uremic toxins and induced stress by hemodialysis procedure cause characteristic overactivated but functionally compromised immune system in patients with end stage renal failure.
Methods. In the present study the amount of FoxP3 and IL2 transcripts were measured in peripheral blood of patients with chronic hemodialysis and 53 healthy cases and were determined by quantitative real time PCR.
Results. In comparison to healthy individuals, significantly higher amounts of these transcripts were detected in the peripheral blood of chronic hemodialyzed patients. Furthermore the significant correlation was found between IL2 and FoxP3 expression in these patients.
Conclusions. High levels of IL2 in peripheral blood of hemodialyzed patients cause premature activation of regulatory T cells and release higher levels of FoxP3 in these patients which appear to result in acquisition of immune suppressive functions.

P 320

The Value of Early Diethylentriamine Penta-Acetic Acid (DTPA) Scan in Renal Transplant Recipients

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Introductions. DTPA scan is used in many kidney transplantation centers as a modality of evaluation of graft dysfunction. It has been stated that DTPA scan cannot differentiate acute rejection from acute tubular rejection accurately. Although it has been found to be only about 15% specific in diagnosing biopsy-proven allograft rejection, its value in predicting long-term prognosis has been emphasized.
Methods. We conducted a retrospective study. The accuracy of DTPA scan was evaluated in the patients with graft dysfunction undergoing both the scan and renal biopsy within first few days after deceased-donor renal transplantation between September 20, 2012 and November 20, 2014.
Results. Forty three patients were included in our study. Acute tubular necrosis (ATN) was the most reported pathology in DTPA renograms. Of a total of 33 biopsy-proven rejections, only five DTPA renograms were reported the same (15%). 8 out of 34 DTPA reports of ATN were confirmed in renal biopsies (23%). Urinary leakage, obstruction and possible calcineurin inhibitor toxicity were also reported in some scans.
Conclusions. In deceased-donor kidney transplantation, early DTPA scan has poor efficacy in differentiating between acute rejection and acute tubular necrosis. According to our findings, it cannot replace kidney biopsy in early post-transplant period.

P 321

Liver Transplantation Using Graft from a Donor with Aplastic Anemia

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Introductions. The availability of the potential deceased donor is usually an emergency situation, with a brief time frame for screening procedures so the transplantation of the affected organs from deceased donors is unavoidable. we describe a case of liver transplantation from a donor with aplastic anemia to a patient with liver failure due to hepatitis C.
Case Report. The deceased donor was a 14 years old boy and the cause of brain death was cerebral haemorrhage secondary to thrombocytopenia.

He had a past-history of known AA and several blood transfusion from two years prior to his death. Laboratory tests «posthumously» was normal. The donor was given 8 units PRBC during his final admission to hospital. The donors Pre-transplant biopsy did not reveal any pathological findings. The recipient was a 60 years old man with ESLD secondry to hepatits C genotype 1 (BMI = 30, MELD score = 20). He underwent liver transplantation(LT). During operation he was given 5 units of PRBC . The patient made an excellent postoperative recovery. A percutaneous liver biopsy was performed on day 120 after LT. The biopsy specimen confirmed recurrent HCV infection, and hemochromatosis (Grade 3/4) and at the same time, the serum ferritin value was > 1650 ng/mL. Standard treatment of recurrent HCV was done, and treatment with multiple phlebotomies was started. At about 10 months following his LT, he underwent twice a month phlebotomy during the period of 8 months, his serum ferritin started to decline gradually and this process continued even after stoppage of phlebotomy. At about 24 months after the operation, the serum ferritin reached an acceptable level.

Conclusions. The use of liver grafts with iron overload in recipients with HCV infection should be carefully considered. Of course, study of additional patients with longer-term follow-up of such patients is desirable before firm conclusions can be made.

P 322

Does Hypertension Remain After Kidney Transplantation?

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Introductions. Hypertension is a common complication of kidney transplantation with the prevalence of 80%. Studies in adults have shown a high prevalence of hypertension (HTN) in the first three months of transplantation while this rate is reduced to 50- 60% at the end of the first year. HTN remains as a major risk factor for cardiovascular diseases, lower graft survival rates and poor function of transplanted kidney in adults and children.

Methods. In this retrospective study, medical records of 400 kidney transplantation patients of Sina Hospital were evaluated. Patients were followed monthly for the 1st year, every two months in the 2nd year and every three months after that.

Results. In this study 244 (61%) patients were male. Mean ± SD age of recipients was 39.3 ± 13.8 years. In most patients (40.8%) the cause of end-stage renal disease (ESRD) was unknown followed by HTN (26.3%). A total of 166 (41.5%) patients had been hypertensive before transplantation and 234 (58.5%) had normal blood pressure. Among these 234 individuals, 94 (40.2%) developed posttransplantation HTN. On the other hand, among 166 pre-transplant hypertensive patients, 86 patients (56.8%) remained hypertensive after transplantation. Totally 180 (45%) patients had post-transplantation HTN and 220 patients (55%) didn't develop HTN.

Conclusions. Based on the findings, the incidence of post-transplantation hypertension is high, and kidney transplantation does not lead to remission of hypertension. On the other hand, hypertension is one of the main causes of ESRD. Thus, early screening of hypertension can prevent kidney damage and reduce further problems in renal transplant recipients.

P 323

Immunogenicity of Four Doses of Double-Strength Intramuscular Hepatitis B

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Introductions. Hepatitis B virus potentially accelerates graft rejection and mortality in renal transplantation population. Vaccination of graft

candidates without prior immunization against HBV seems essential before transplantation but some candidates of transplantation have not received HBV vaccine at the time of receiving graft. We aimed to evaluate immunogenicity of an enhanced regimen (4 doses of double-strength intramuscular shots) after kidney transplantation in candidates without history of prior HBV vaccination.

Methods. This quasi-experimental study was conducted, 49 renal graft recipients in Sina Hospital (Tehran University of Medical Sciences, Tehran, Iran) of age > 18, receiving graft within past 6 months and negative history of hepatitis B vaccination from 2010-2011. Participants received 40 µg intramuscular (IM) shots of a recombinant vaccine in the months 0, 1, 2 and 6. The titer of HBsAb was measured 8 weeks after the 3rd and 4th injections. Cases with HBsAb titers less than 10 mIu/ml were considered as non-responder while antiHBs ≥ 10 mIu/ml was considered protective.

Results. The overall response rate was 57.14% (28/49 patients). Protective HBsAb titers were detected in 44.89% patients following 3rd dose and reached to 57.14% after injecting the 4th shots. The mean HBsAb titers were 50.00 (± 88.35) mIu/ml and 229.45 (± 356.56) mIu/ml after the 3rd and 4th shots respectively. Responders showed significantly younger age in comparison to non-responders (P = 0.013). The vaccine was well tolerated in all patients with no side effects.

Conclusions. Regarding the relative good response rate following HBV vaccination in graft recipients, we suggest a post-transplantation enhanced regimen of 4-dose double-strength IM shots against HBV in patients without prior immunization.

P 324

Comparing Three Data Mining Methods to Predict Kidney Transplant Survival

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Introductions. One of the most important complications of post-transplant is rejection. Analyzing survival is one of the areas of medical prognosis and data mining, as an effective approach, has the capacity of analyzing and estimating outcomes in advance through discovering appropriate models among data. The present study aims at comparing the effectiveness of C5.0 algorithms, neural network and C&RTree to predict kidney transplant survival before transplant.

Methods. To detect factors effective in predicting transplant survival, information needs analysis was performed via a researcher-made questionnaire. A checklist was prepared and data of 513 kidney disease patient files were extracted from Sina Urology Research Center. Following CRISP methodology for data mining, IBM SPSS Modeler 14.2, C5.0, C&RTree algorithms and neural network were used.

Results. Body Mass Index (BMI), cause of renal dysfunction and duration of dialysis were evaluated in all three models as the most effective factors in transplant survival. C5.0 algorithm with the highest validity (96.77%) was the first in estimating kidney transplant survival in patients followed by C&RTree (83.7%) and neural network (79.5%) models.

Conclusions. Among the three models, C5.0 algorithm was the top model with high validity that confirms its strength in predicting survival. The most effective kidney transplant survival factors were detected in this study; therefore, duration of transplant survival (year) can be determined considering the regulations set for a new sample with specific characteristics.

P 325

Kidneys Transplanted from Brain Dead Donors with Higher Creatinine Levels but the Same Kidney Donor Profile Index Have Comparable Short-Term Outcome

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Introductions. Although the shortage of kidneys for transplantation has been addressed by expanding the acceptance criteria, transplantation teams don't have great tendency to accept organs from brain dead donors with higher creatinine before harvesting. The aim of this study was to evaluate the impact of brain dead donor serum creatinine (Cr) level whose kidney donor profile index (KDPI) were acceptable on outcome of transplanted kidneys.
Methods. In this retrospective study, the records of brain-dead donors of Masih Daneshvari organ procurement unit were assessed. Donor demographic data (age, sex), brain death cause and the Cr level before organ retrieval were recorded and KDPI was calculated. Donors with KDPI below 50% were selected. The Cr level was categorized based on > 1.5 mg/dl with origin of prerenal azotemia or lower. The urine output of transplanted patients in the first 24-hour post-transplant, serum Cr level at discharge from hospital and dialysis during first month after transplantation were compared between two groups.
Results. The medical file of 66 donors and 122 recipients were studied. Mean age of donors was 37.4 ± 17.9yr and 39 (59%) were male. The cause of brain death in 23 (35%) was trauma. The donors' creatinine level before organ retrieval ICU was higher than 1.5 mg/dl in 25 (38%). The first 24-hour urine output did not significantly differ between donors' creatinine level lower than 1.6mg/dl or higher (543000 ± 2658ml and 4283 ± 3279ml, respectively, $P = 0.072$). Similarly, the recipient discharge serum Cr level did not significantly differ between two groups (1.67 ± 0.89 and 1.72 ± 1.39 mg/dl, respectively, $P = 0.67$). Overall 15 recipients (12.2) needed dialysis during first month after transplantation and there was no significant difference between groups (11% and 17%, respectively, $P = 0.2$).
Conclusions. Findings of this study showed that the outcome of transplanted kidneys from brain-dead donors with Cr level > 1.5mg/dl is similar to other ones in acceptable KDPI donors. So, higher creatinine level is not a good excuse for rejecting the kidneys for transplantation. Because of various confounding factors in the assessment of transplanted kidney outcome, the future studies with larger sample size and longer follow-up period is recommended.

P 326

Prognostic Value of Hemoglobin Concentration and Graft Vein Blood Oxygenation (Vbo2) on Renal Transplantation Outcomes

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Introductions. To introduce vein blood gas (VBG) of transplanted kidney amid surgery as a predicting factor for delayed graft function after renal transplantation.
Methods. Sixty patients with renal transplantation entered the study from Jan 2015 to Jan 2016. After declamping of the vessels, blood sample from transplanted kidney veins were taken and acidosis and oxygenation in these samples were measured. Patients were classified based on acidosis and oxygenation of grafted vein and also hemoglobin concentration. We tried to compare delayed graft function in recipients with acidosis versus normal PH, hypoxia versus normal oxygenation and hemoglobin less than 10 g/dl versus more than 10g/dl.
Results. Ten percent (six patients) of all patients experienced delayed graft function and needed hemodialysis. All of these hemodialysis were in acidosis and hypoxic groups. Five out of six recipients with delayed graft function had Hg < 10. Hospital stay was significantly longer in patients with hypoxia, acidosis and anemia.
Conclusions. VBG of grafted renal vein during surgery can easily obtained and applied as a prognostic factor for delayed graft function.

P 327

Causes of Heart Beating Donors Loss Before Organ Retrieval

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Introductions. When potential brain dead donors are in line up for organ retrieval, their loss would be such a disaster to come. The aim of this study was to detect and evaluate the occurrence of different disorders leading to pre-retrieval donor's cardiac arrest and loss in order to prevent this energy and money wasting challenge.
Methods. Medical records of potential donors who were lost after transfer to organ procurement unit and before organ donation were reviewed and weigh of every responsible disorder was tested.
Results. In 13 years of experience in organ donation, 46 (3.09%) out of 1485 potential donors were lost after their transfer to OPU with the aim of organ donation. Mean age of donors and their gender were not significantly different to actual donors. (37.4 ± 17.7 versus 39.2 ± 18.4, $P = 0.2$). However, proportion of drug toxicity as the cause of brain death was more common in the lost donors. (19.5% versus 5.3%, $P = 0.001$). 13 (28.2%) of the cases had a documented history of ischemic heart disease, which was not as common in actual donors (12.8%, $P = o. o2$) After excluding hypotension and Diabetes Insipidus which are two common stations in natural course of brain death, the leading disorders among cases were metabolic acidosis (30 cases, 65.2%), hypocalcaemia (22 cases, 47.8%) hyperglycemia (21 cases, 45.6%) and different presentations of coagulopathy (18 cases, 39.1%). Clinical conditions of 22 (47.8%) cases were flared up by different severities of acute kidney injury and mean ALT levels were significantly higher than actual donors (286.2 Versus 105.6, $P < 0.001$). All the above-mentioned disorders were significantly more common in lost donors than actual ones.
Conclusions. Drug toxicity, history of ischemic heart disease and occurrence of acute kidney injury are associated with more potential donors' loss before organ retrieval.

P 328

The Effects of Interaperitoneal Injection of Grapheme Oxide and Condition Media of Mesenchymal Stem Cells on Acute Kidney Injury

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Introductions. This study examined the effect of intera peritoneal injection of 1.5 mg per kilogram nano grapheme oxide and mesenchymal stem cells condition media on the severity of acute kidney injury.
Methds. Acute kidney injury was induced in male rats with 5 mg/kg of cisplatin for six consecutive days intraperitoneally. After inducing the standard model of acute kidney injury, the conditioned medium of 5 $\times 10^{6}$ cells was calculated for each kilogram of body weight of the rats. Then, it was injected in three different injection patterns other than the baseline injection of cisplatin. The rats were randomly divided into four groups: control group (n = 18) that did not receive any treatment, cisplatin group (n = 18) that received cisplatin at a dosage of 5 mg/kg for six consecutive days intraperitoneally, third group (n = 54) that received cisplatin and graphene oxide and the final group received nano grapheme oxide with mesenchymal stem cells condition media for five consecutive days, and an experimental group (n = 54) that received cisplatin for six consecutive days. Serum biochemical analysis and histological changes were studied and analyzed in all groups.
Results. A reduced serum creatinine and blood urea nitrogen was observed in animal treated by grapheme oxide and mesenchymal stem cells condition media.
Conclusions. Secretory factors of human mesenchymal stem cells condition media and grapheme oxide can be partly protective against acute kidney injury.

P 329

Comparison of Vascular Xenograft Rejection Pattern in Mice Between Jersey and Holstein Cow

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Introductions. It is believed that results of

xenotransplantation is affected by donor family not donor species. Cow family like other animals has different species. Does xenotransplantation from Jersey specie has different results of Holstein specie?

Methods. Twenty BALB/c mice received heterotopic arterial transplantation from tail of Jersey cow donors (n = 10) and Holstein cow (n = 10) implanted without primary vascularization in a dorsal subcutaneous pouch. After 8 days, grafts were removed and blind examination of them was done for graft acute rejection. Three specifications were considered, vascular intima and media thickness, vessel remained lumen to whole surface percentage and lymphocyte infiltration surface to whole surface percentage.

Results. There was no significant difference of ischemic time between two groups, also two groups did not showed significant differences in layers thickness and remained lumen, (P = 0.075) and (P = 0.857) respectively. Lymphocyte infiltration surface percentage in Holstein group was more than twice compared to Jersey group, 76.67% versus 31%, and the difference was significant (P = 0.049).

Conclusions. In this small study, Jersey group compared to Holstein group, showed less lymphocyte infiltration resembling acute rejection. Then rejection in xenotransplantation may be different not only because of different families but also because of different species. If future researches show the same results, it may be considered to use Jersey cow tissues for transplantation to human to achieve better graft acceptance.

P 330

Evaluation of Early Renal Dysfunction with 99mTc-DMSA Following Intravenous Injection of Hemiscorpius Lepturus Venom in Rats

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Introduction. Scorpion bite is common in tropical areas of the world including southwestern part of Iran. In minority of cases, Hemiscorpius lepturus envenomation causes acute renal failure leading to death specially in infants. The aim of this study, was to evaluate renal dysfunction by different methods including measurement of serum creatinine and BUN, histopathological examination of kidneys and single photon emission computed tomography (SPECT) following intravenous injection H.lepturus venom in rats.

Methods. Male Wistar rats (n=3) were injected Hemiscorpius lepturus venom (400µg/400 µl) via tail vein. Normal saline was injected in sham group with the same schedule. Three hours later, 99mTc-DMSA (3 mCi) was intravenously injected in both groups and renal scintigraphy was performed an hour later to evaluate the renal function. The rats were sacrificed and serum was analyzed for measuring creatinine and BUN level. the kidneys were removed and histopathological assessment was performed after hematoxylin and eosin staining.

Results. There was no mortality in both groups during 4 hours following envenomation. The 99mTc uptake in the treated kidney was about 30% of the sham group. Histopathological findings among both groups showed only mild peritubular congestion in treated rats. There were no statistically significant differences between both groups in creatinine and BUN measurement ($p<0.05$). There was no or yes correlation between DMSA and histopathological findings.

Conclusions. Measurement of serum creatinine and BUN has no potential to predict early renal damages. Scintigraphy with 99mTc-DMSA has the ability to investigate early kidney injury. Additionally, there was significant or no histopathological changes after 4 hours of envenomation. Our study paves the way for early detection of organ failure following injection of different venoms in rats.

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