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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ABSTRACTS

Pre-congress Day

Tuesday, September 29

O101

Microbiology and Epidemiology of Peritonitis Among Patients Undergoing Chronic Peritoneal Dialysis in Shiraz Emam-Reza Center

Ezzatzadegan Shahrokh[1], Ahmed Faisal-Mohammed[2], Roozbeh Jamshid[1]

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Introductions. Peritonitis is the main cause of morbidity and dropout from peritoneal dialysis (PD) program. Prevention and treatment can be obtained through accurate knowledge of epidemiology, microbiology, and complications of this disease. We aimed to study the incidence, responsible micro-organisms, and the risk factors predisposing to PD-associated peritonitis in patients referring to Shiraz Emam-Reza center.

Methods. All patients undergoing chronic PD from April 2006 to April 2012 were recruited into the study. Data including age, sex, underlying disease, occupation, frequency of peritonitis, the fluid culture results, symptoms suggestive of peritonitis, and timing of peritonitis were recorded.

Results. Ninety-three patients out of total 237 (39.24%) developed peritonitis in 170 episodes with 46.19% experiencing $\geq$ 2 episodes. With a total follow up time of 4301 patient-months, the peritonitis rate was 1 episode per 25.3 patient-months. The most common symptoms of patients with peritonitis included cloudy drain in 93.5%, abdominal pain in 90.6%. Only hypertension, educational level lower than diploma, and higher BMI significant positive effect on incidence of peritonitis ($P < 0.05$, $P < 0.05$, and $P < 0.05$; respectively) and gender, history of previous hemodialysis, and carrier status for staphylococcus aureus nasal carrier had no significant relationship ($P > 0.05$, $P > 0.05$, and $P > 0.05$; respectively). While culture results from 27 (15.9%) episodes was not available, the result of 37 (21.8%) of the performed samples was negative. The most common micro-organism isolated was coagulase-negative staphylococci (no = 54, 31.7%) followed by streptococcus spp. (no = 10, 5.9%), and diphteroid (no = 8, 4.7%). E-coli was the most common of gram positives (no = 5, 2.9%) followed by klebsiella (no = 4, 2.4%), acinetobacter (no = 4, 2.4%) and pseudomonas aeruginosa (no = 3, 1.8%). There were 5 episodes of peritonitis reported to be candida (2.9%). The antibiogram results showed the highest susceptibility to vancomycin (no = 86, 85%) and ciprofloxacin (no = 81, 80.2%) of 101 available antibiograms. Hospitalization was reported in 29 (17.1%) and catheter removal in 19 episodes (11%). Peritonitis resulted in transfer of 8 patents (4% of episodes) to hemodialysis. Death was reported in 4 patients (2.4%).

Conclusions. Incidence of peritonitis was around 40% (1 episode per 25.3 patient-months) in our study, which is lower than the standard ISPD guideline recommendations. Peritonitis is still a major concern in switching to hemodialysis.

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ABSTRACTS

First Day

Wednesday, September 30

O201

Effect of Pentoxifylline on Prevention of Contrast Induced Nephropathy

Barzi Farnaz[1], Sadeghi Mohsen[1], Parsa-Mahjoub Mohammad[1], Miri Mir-Mohammad[1], Sistanizad Mohammad[1], Mahmoudi Seyed-Sajjad[2]

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Introductions. Contrast-induced nephropathy (CIN) especially in patients who underwent coronary angiography is the most common cause of acute renal failure. It is more common in high risk patients who have congestive heart failure, diabetes mellitus, renal failure, anemia, and old age. Pentoxifylline is a medication that could have preventive effects on contrast induced nephropathy with its antioxidative and anti-inflammatory effects. The aim of this study was to evaluate the effects of pentoxifylline in the prevention of contrast-induced nephropathy in high risk patients.
Methods. This was a double-blind randomized clinical trial (RCT). Patients who were underwent coronary angiography with Mehran Score ≥ 11 were our study population. 110 (55 + 55) patients in two groups (control and case) received saline 0.9% + NAC and saline 0.9% + NAC + pentoxifylline 400 mg three times per day from 24 hours before angiography until 48 hours after coronary angiography. Increase in serum creatinine levels 0.5 mg/dL from baseline in 48 hours after angiography was considered as CIN.
Results. Incidence of CIN in both groups was 3.6%. Mean serum creatinine level in case and control group before and after angiography was 1.3 ± 0.8 mg/dL, 1.3 ± 1.0 mg/dL, and 1.2 ± 0.3 mg/dL, 1.1 ± 0.3 mg/dL; respectively (P > 0.05). Others related factors including age, gender, underlying disease, medications, and the type and amount of contrast media were matched in both groups.
Conclusions. In this RCT, we investigated the effect of pentoxifylline on prevention of CIN. According our study, pentoxifylline had no prophylactic effect on prevention of contrast nephropathy in high-risk patients in addition to standard therapy.

O202

Survival Probabilities of ESRD Patients in Iran

Heidary-Rouchi Alireza[1], Mansournia Mohammad-Ali[2], Aghighi Mohammad[3], Mahdavi-Mazdeh Mitra[1]

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Introductions. Long-term trend and situational analyses, taking both quantitative and qualitative indices into consideration, convey comprehensive information for clinicians and health policy-makers. End-stage renal disease is associated with significant diminished survival compared to general population. The complexity and financial burden of renal replacement therapies justify the scrutinized surveillance of this ever-growing health dilemma.
Methods. The national registry of ESRD patients, based in Ministry of Health and Medical Education, was the source of the data. The records of ESRD patients from 1995 to 2014 were analyzed and survival probabilities were estimated from mortality rates using exponential formula.
Results. The prevalence of ESRD patients was growing in Iran lower than average global or regional growth rates during last ten years (4.9 vs. 7 vs. 7-10). Mean age (SD) in newly diagnosed patients from 2010 to 2014 was 55.1 (16.8). Male / female ratio in same period was 1.4/1. More than 90% of ESRD patients initiated dialysis treatment had no timely created and mature arterio-venous fistula. From 2003 to 2014, DM and HTN accounted for more than 50% of causes of ESRD. Overall (unadjusted) mortality rate among dialysis patients in 1995, 2000, 2005, 2010, and 2013 was 14.9%, 12.4%, 15.7%, 18.1%, and 16.5%; respectively. On average, from 2005, annually 16.1% of patients with a functioning graft lost their kidneys. Out of 39,013 performed kidney transplantation from 1984 up to and 2014 (82.9% from living donors), at the end of 2014, 11,579 patients lived with a functioning graft. Median graft half-life and median expected remaining life-years for dialysis patients for cohort 2003 patients were 4.4 and 4.2 years, respectively.

Conclusions. The most appropriate approach to cope with such a life-threatening condition, ESRD, is to implement effective preventing strategies by integration of CKD control program in primary health care.

O203

Arterial Hypertension in Dialysis Patients: Impacts of Age, Gender, Dialysis Characteristics, and Etiologies of Chronic Kidney Diseases

Naseri Mitra

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Introductions. Hypertension is common in chronic kidney diseases (CKD). The study aimed to define the prevalence rate of arterial hypertension in dialysis patients and define its prevalence rate with considering patients and dialysis modalities characteristics.
Methods. During a six-month period hemodialysis (HD) and continuous ambulatory peritoneal dialysis (CAPD) cases who were supervised by academic dialysis sections of a children hospital were evaluated. Blood pressure was measured by auscultator method. Monthly mean Systolic and diastolic recorded BP in HD and BP levels recorded in CAPD cases during monthly visit were assessed.
Results. Totally 77 dialysis cases including 39 (50.6%) peritoneal dialysis and 38 (49.4%) hemodialysis patients enrolled the study. In overall, 38 cases (49.4%) had arterial hypertension. In 17 (22.1%) and 22 patients (28.5%) blood pressures were in normal or prehypertension ranges respectively. In hypertensive patients, there was a shorter time from onset of dialysis ($P > 0.05$), and also glomerular disorders as etiology of chronic kidney diseases were more prevalent ($P > 0.05$), but no significant differences were found based on gender, modality of dialysis, anuria, and non-anuria conditions and characteristics of dialysis [(hours of dialysis weekly in HD and volume of dialysis daily (cc/kg/d) in CAPD cases ($P > 0.05$, for all).
Conclusions: It noted that hypertension is a common complication of CKD. It's as common in children as adults who underwent dialysis. Patients and dialysis characteristics and also etiology of CKD didn't have significant impact on prevalence of hypertension.

O204

The Effect of Allopurinol on Lowering Blood Pressure in Hemodialysis Patients with Hyperuricemia

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Introductions. Hyperuricemia has been associated with the development of high blood pressure (BP). We studied the effects of allopurinol therapy in hyperuricemic hemodialysis (HD) patients with high BP.
Methods. This single-blind, randomized cross-over clinical study involved 55 HD patients with serum uric acid level > 6.5 (men) and > 5.5 mg/dL (women). They were randomly divided in two groups, each of which went through two phases. Group-1 in phase-1 received 100 mg/d orally of allopurinol for three months; while Group-2 was given whatever medication they received prior to the study. After two months of washing period, the groups were crossed-over. The BP levels were measured before and after HD during the eight months study period.
Results. Fifty-three patients completed the study (33 men and 20 women, with mean age of 55.8 years). Uric acid levels decreased significantly during the 12-week of allopurinol therapy (7.71 ± 1.53 to 5.2 ± 1.2, $P < 0.05$). Overall, after the 12 weeks of allopurinol therapy, systolic and diastolic BP also significantly decreased in allopurinol group, 15.8% (139 to 117, $P < 0.001$) and 8.6% (81 to 74, $P < 0.001$), respectively. There were not significant changes in body mass index, blood urea nitrogen, creatinine, albumin, cholesterol, triglyceride, hemoglobin, liver enzymes, and serum electrolytes level after treatment. Patients treated with allopurinol had a significant increase in the quality of dialysis (kt/v) [$P < 0.05$].

Conclusions. In HD patients, allopurinol treatment reduced BP. The results indicate a new potential therapeutic approach for controlling BP in HD patients.

O205

Effects of Nigella Sativa Linn. (Black Seed) on Experimental Renal Ischemia-Reperfusion Injury in Rats

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Introductions. Renal ischemia and reperfusion (I/R) injury is the major cause of acute renal failure and may also be involved in the progression of some forms of chronic kidney disease, which is encountered in many clinical conditions such as kidney transplantation, partial nephrectomy, hemorrhagic shock, and certain hypotensive states. The main objective of this study was to evaluate the effects of Black seed, as a natural antioxidant, on renal I/R induced injury in the rats.
Methods. Forty male Wistar rats were randomly allocated into 5 equal groups including Sham, I/R model, and three I/R+ Black seed (5, 10, and 20%)-treated groups. I/R groups' kidneys were subjected to 60 min of global ischemia at 37 °C followed by 24-hour of reperfusion. At the end of reperfusion period, the rats were euthanized. The plasma concentrations of creatinine, BUN, and uric acid were measured for the assessment of renal dysfunction. Oxidant/antioxidant status was determined in renal tissues. Pathologic changes of kidney were examined. Apoptosis of tubular cells was assessed by terminal deoxynucleotidyl transferase-mediated dUTP nick-end labeling (TUNEL) method. Results were compared with sham operation group.
Results. High serum creatinine, BUN, and uric acid as well as malondialhehyde levels, and low antioxidant enzyme activities were observed in I/R group compared to the sham rats. The apoptotic cells of renal tubules were increased significantly ($P < 0.01$) in I/R group than those in sham operation group. Pre-treatment with Black seed for three weeks prior to I/R operation improved renal oxidant/antioxidant status and function. The tissue damage ameliorated markedly in Black seed pretreated groups. The TUNEL positive cells in Black seed (10% and 20%) treatment groups decreased significantly ($P < 0.05$).
Conclusions. The results showed that Black seed significantly prevented renal I/R-induced functional and histological injuries. Inhibition of apoptosis may be responsible for the protective effects of Black seed in rats with renal I/R injury.

O206

Evaluation of Prostaglandin E1 infusion Effects on Urinary Calcium Excretion in Neonate with Congenital Heart Disease

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Introductions. Congenital heart disease, related to the patent ductus arteriosus, is one of the most important life-threatening conditions in human life. Administration of prostaglandin E1 to keep open the ductus arteriosus and fetal survival before corrective surgery is necessary. Despite the life-giving role of prostaglandin E1, numerous and dangerous side effects for this drug are considered, including the theories discussed, is the effect of prostaglandin E1 on creation of hypercalciuria. This study is aimed to assess the effect of intravenous infusion prostaglandin E1 on calcium excretion in the urine of the newborns with congenital heart disease in 22-Bahman hospital in Mashhad.
Methods. This study included ten neonates with congenital heart disease, related to the patent ductus arteriosus, which were admitted in 22-Bahman hospital. Random urine samples were taken from each newborn in three times. Sampling was performed once before injection and then 24 hours and 72 hours after of prostaglandin E1 infusion. Urine samples were tested in terms of calcium, sodium, and creatinine, and then the results were analyzed using statistical methods.
Results. The calcium level and calcium-to-creatinine ratio in the third sample, compared to second and

the first samples significantly increased ($P < 0.05$). And the average of calcium-to-creatinine ratio in half of the patients in the third sample was above the normal range (< 0.8). The sodium-to-creatinine ratio was higher than normal sodium range (< 54). **Conclusions.** Ascending trend of calcium excretion in the urine and hypercalciuria created in half of patients in the third sample might be suggestive of a prostaglandin E1 role on calcium excretion in urine and chances of hypercalciuria in the coming days' treatment on other newborns and increased the risk of kidney stones and nephrocalcinosis in the future.

P101

Effect of Vitamin D Prescription on Proteinuria in Type 2 Diabetic Patients

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Introductions. Vitamin D (Vit D) deficiency is a common disorder in diabetic patients and may be a risk factor for ischemic heart disease and exacerbation of diabetic nephropathy. Vit D metabolites may have a role in the inhibition of the rennin-angiotensin system and renoprotective effect by preventing of glomerulosclerosis, antiproteinuric effect and decreasing of insulin resistance, so the aim of this study was to evaluate effect of Vit D3 prescription on proteinuria in type 2 diabetic patients.
Methods. In a double blind clinical trial, 60 type 2 diabetic patients with proteinuria greater than 150 mg/d who had Vit D deficiency (serum Vit D < 50 nmol/L) or insufficiency (50 < Vit D < 75 nmol/L) were enrolled in two equal groups. Pearl of Vit D as 50000 IU/week and placebo (1 tablet per week) were prescribed in patients of case and control groups respectively for 8 weeks. At the beginning and 2 months later, 24 hours urine protein was checked in all patients.
Results. Twelve patients of case group and eighteen patients of control group were female and others were male. Mean age of case and control groups were 62.9 ± 9.3 and 62.4 ± 9 respectively ($P > 0.05$). Serum Vit D level in case group were 36.7 ± 19.16 nmol/L and 89.43 ± 34.35 nmo/L before and after the study respectively ($P < 0.001$), however in control group, serum Vit D level were 32.19 ± 17.76 nmol/L and 38.02 ± 23.90 nmol/L respectively ($P < 0.05$). Daily urine protein was 962.62 ± 855.99 mg and 755.71 ± 640.94 mg in case and control group respectively before the study ($P > 0.05$) and it was 892.24 ± 879.40 mg and 971.60 ± 940.24 mg respectively ($P > 0.05$) at the end of the study. A non-significant decrease in proteinuria during the study was observed in the case group ($P > 0.05$) but in control group, proteinuria was significantly increased after the study ($P < 0.05$).
Conclusions. Proteinuria slightly decreased in the type 2 diabetic patients who received vit D, but in the control group, proteinuria increased significantly. Thus, we concluded that Vit D deficiency may exacerbate proteinuric and diabetic nephropathy, so correction of Vit D deficiency may decrease proteinuria in diabetic patients with nephropathy.

P102

Evaluation of Cumin Effect on Serum Level of Glycosylated Hemoglobin, Leptin, and Oxidized LDL in Type 2 Diabetic Patients

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Introductions. Oxidative stress is a complication of diabetes mellitus that may play an important role in the development of late complications of diabetes. Cumin is a known anti-oxidant agent, therefore can be effective on decreasing of oxidative stress and free radicals. So the aim of the study was evaluation of cumin effects on blood level of glycated hemoglobin (HbA1c), fasting blood sugar (FBS), lipid profile, Leptin, paroxinase1, and oxidized low density lipoprotein (oxLDL).
Methods. In a double blind clinical trial, 60 type 2 diabetic patients were enrolled in two equal case and control groups. The patients of case group given cumin and the control group, placebo for 3 months. Total cholesterol (TC), Triglycerides (TG), FBS, HbA1c, leptin, paroxinase1, oxLDL, and HDL was measured in both groups at the beginning and at the end of the study.
Results. There is no difference between two groups of the patients regarding to age, sex, body mass index, systolic and diastolic blood pressure. There is no significant difference in the beginning of the study in two groups based on FBS, HbA1c, TG, cholesterol, leptin and oxLDL. However at the end of the study; FBS ($P < 0.001$), HbA1c ($P < 0.001$), and TG ($P < 0.01$) were significantly lower in the case group than control group. Instead, in the case group than control group, FBS ($P < 0.05$), HbA1c ($P < 0.05$), Leptin ($P < 0.05$), oxLDL ($P < 0.001$) decreased and paroxinase-1 ($P < 0.05$) increased significantly at the end of the study.
Conclusions. The study showed that cumin increase paroxinase-1 and decrease FBS, HbA1c, leptin, and

oxLDL. So we concluded that administration of cumin probably can decrease late complications of diabetes mellitus such as cardiovascular and renal diseases.

P103

Urinary Ghrelin Concentration in children with Urinary Tract Infections Before and After Treatment

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Introductions. Ghrelin is a regulatory hormone that is mainly produced in stomach but is also produced in smaller amounts in other organs such as kidneys. Ghrelin stimulates release of growth hormone (GH), increases food intake, and causes weight gain, mainly in fat tissue. In this study, we aimed to compare Ghrelin levels in children with urinary tract infections before and after treatment.
Methods. Urinary Ghrelin and creatinine were measured before and after treatment of 40 children with urinary tract infection in 2013-2014. Pyelonephritis was diagnosed by sign and symptoms and confirmed with positive urine culture and presence of photopenic areas in Dimercapto Succinic Acid (DMSA) renal scan. Statistical analyzes were performed using SPSS software version 18. Student t test was used for analysis of quantitative data. Qualitative data were analyzed by Wilcoxon test and correlations by Spearman coefficient and differences considered significant if $P < 0.05$.
Results. Mean age was 4.5 ± 3.8 years and 34 children (85%) were female. Mean urinary acylated ghrelin of patients before and after treatment were 138.4 ($P < 0.001$). There was no significant difference between the mean urinary Ghrelin before and after treatment in children with urinary tract infection with or without anorexia. Acylated ghrelin have inversely related with urinary Cr levels ($P < 0.05$) and direct correlation with the incidence of renal scarring ($P < 0.05$).
Conclusions. The results of this study indicate that urinary Ghrelin level decreased in acute phase of pyelonephritis and significantly increased after treatment. Further investigations are need before suggesting treatment with ghrelin or ghrelin receptor antagonists in patients with UTI.

P104

Acute Kidney Injury Applying pRifle Scale in Children of Hospital 17-Shahrivar Hospital in Rasht, Frequency and Prognosis

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Introductions. Acute kidney injury (AKI) is a clinical syndrome consisting of a sudden impairment of kidney function, which results in inability of the kidneys to maintain fluid and electrolyte homeostasis. This disease occurs in 2-3% of children admitted to the referral centers and in about 8% of infants hospitalized in neonatal intensive care units. This study aimed to evaluate frequency distribution and prognosis of acute kidney injury based on pRIFLE criteria in patients hospitalized in intensive care unit of 17-Shahrivar hospital in Rasht.
Methods. This is a cohort study including 323 patients based on age, sex, the risk of mortality based on PRISM III criteria, degree of kidney injury (pRIFLE criteria), mechanical ventilation, vasoactive drugs, nephrotoxic drugs, renal replacement therapy (RRT), duration of hospitalization, and treatment outcome (death or discharge). Data were analyzed using SPSS 187 and Pearson chi square test. In order to determine the effect of factors, data were analyzed by Logistic Regression method.
Results. On admission, out of the 323 patients admitted to PICU in 17-Shahrivar hospital, 64 patients (19.8%) had AKI. Among these people 21 patients (32.8%) had no kidney problems, 16 (25%) were in R stage, 20 patients (31.2%) were in I stage, and 7 patients (10.9%) were in F stage and 9.4% patients required RRT. Also, a significant correlation was observed in patients with AKI based on gender, mean PRISM, the use of vasoactive drugs, mechanical ventilation, the incidence of encephalopathy, shock, duration of hospitalization, and mortality. In addition, the severity of kidney injury based on pRIFLE criteria had a significant

correlation with need for renal replacement therapy (RRT). In our study, a significant correlation was observed between the incidence of mortality with the use of mechanical ventilation, vasoactive drugs, encephalopathy, thrombocytopenia, shock, the need for RRT, and duration of hospitalization. Regression analysis showed that PRISM III score, gender, and encephalopathy were independent risk factors for the incidence of AKI and the incidence of AKI was an independent risk factor for mortality. The lengths of stay in the ICU and in the hospital were longer in the affected group than in the unaffected group. The advanced strata of pRIFLE max were associated with longer stays in the ICU and hospital.

Conclusions. AKI affects a high percentage of critically ill patients admitted to PICU. Although pRIFLE criteria is a convenient and efficient criteria for early diagnosis of acute kidney injury, accelerating treatment, and reducing AKI complication, its role alone as a prognostic factor of mortality needs further studies compared to other conventional methods used in PICU. We recommended pRIFLE scale for early diagnosis of AKI in all pediatric services. Future multi-centric pediatric studies of AKI, applying this new pRIFLE Scale and with standardized management of AKI will permit greater information on this pathology and will determine the risk factors in children.

P105

Risk Factors for Pediatric Kidney and Urinary Tract Stones

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Introductions. The prevalence of pediatric urolithiasis appears to be increasing in worldwide, and presenting signs and symptoms are often considerably different from those in adults. The aim of this study was to evaluate the Presenting signs and symptoms of pediatric nephrolithiasis, to detect the related risk factors, and the clinical follow up.

Methods. In this prospective study we evaluated and followed 100 pediatric nephrolithiasis patients between March 2010 to May 2013 (45% girls and 55% boys).

Results. The mean age of the patients was 6.4 ± 3.3 years (1 month-16 years). There was a positive history of stone in the first related degree (65%). The classic unilateral colicky flank pain occurs in only 9% of cases. Other symptoms included: abdominal pain (33%), gross hematuria (15 %), UTI (12%), and spontaneous urinary passage of stone (7%). In younger children, UTI, failure to thrive (FTT), and incidental radiologic findings most often lead to the diagnosis. Irritability was the most symptoms in the infantile group (32%). Microhematuria was the most common abnormality in urinalysis (75%), and Pyuria was found in only 32%. Hyperuricaciduria considered as the most common metabolic abnormalities (55%), followed by hypercalciuria (35%), hypocitraturia (5%), hyperoxaluria (3%), and Cystinuria (3%). Ten percent of patients had anatomical urinary tract abnormalities, and for 11% of cases all evaluations were normal. Most of the stones were treated with medical management such as potassium citrates (67%). Stones were disintegrated with ESWL in 18 cases, endoscopic interventions were used in 11 and four underwent an open surgical procedure. 23% of children experienced recurrence of the nephrolithiasis over the one year follow-up.

Conclusions. Clinical presentation of nephrolithiasis in children differs from adults. All children with nephrolithiasis should have a metabolic evaluation, and most of them respond to the medical managements.

P106

Relation Between Serum Hemoglobin and Creatinine Levels with Intra-Hospital Mortality and Morbidity in Acute Myocardial Infarction

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Introductions. Studies showed that GFR (glomerular filtration rate) and Hb (hemoglobin) concentrations are two predictive values for ST

elevation MI (myocardial infarction) mortality. We aim to investigate the relation between these two parameters with intra hospital mortality, ECG (electrocardiography), and echocardiographic abnormalities in ST elevation MI patients admitted in a highly equipped hospital in Mashhad to define some factors which help us to manage these patients in a better way.

Methods. Relation between Hb and GFR with mortality and morbidities were investigated in 294 randomly selected patients with ST elevation MI in a descriptive study. Echocardiography, ECG, and routine laboratory test including Hb and Cr were performed in all of them. Data was analyzed with SPSS 16 using chi-square, T test, and ANOVA. $P < 0.05$ was considered significant.

Results. Intra-hospital death was 10.5 % and higher levels of serum blood sugar ($P < 0.001$), higher levels of creatinine ($P < 0.001$), lower levels of GFR ($P < 0.001$), lower levels of ejection fraction ($P < 0.001$), higher grade of LV diastolic dysfunction ($P < 0.05$), and lower mean Hb concentration ($P < 0.05$) was found statistically significant in comparison with alive cases. We found that patients with mechanical complications had lower levels of Hb ($P < 0.05$). There was no relationship between creatinine and mechanical or electrical complications ($P > 0.05$ and $P > 0.05$, respectively). Ejection fraction was also associated with GFR ($P < 0.05$).

Conclusions. Low levels of Hb and GFR can predict mortality caused by ST elevation MI and also ECG abnormalities can aware us about intra hospital death. Lower levels of Hb were associated with mechanical complications and can use as parameter for diagnosis high risk patients.

P107

Epidemiologic Study of Hemodialysis Patients in Isfahan

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Introductions. Chronic kidney disease (CKD) is an important public health issue because these patients have an increased risk of end-stage renal disease (ESRD). Hemodialysis is one of the renal replacement therapies for patients with end-stage kidney disease (ESKD). This Review focuses on the epidemiologic characteristics of hemodialysis patients in Isfahan city.

Methods. In this cross sectional study 1700 hemodialysis patients were evaluated in 2015. They have been undergoing hemodialysis in 30 hemodialysis centers in Isfahan. Characteristics of the patients including; age, sex, level of education, occupation, blood group, primary renal disease, family history of ESKD, vascular access, duration of hemodialysis, and other variables were collected from patients records and also personal patients interviews. Data were analyzed by the software SPSS 15.

Results. The total number of 1700 hemodialysis patients was studied, 62% were male and mean of age was 53 years. Blood group was O in 37% of the patients. Family history of ESKD was positive in 14% of the patients. 46% were unemployed before starting hemodialysis. The most common primary renal disease was hypertension and DM (there was no significant difference between DM and hypertension). Vascular access of 51% of the patients was permacath. 80% of dialysis patients are under four years. The prevalence rate of hemodialysis in our city is 340 pmp.

Conclusions. In Isfahan, CKD is a substantial health burden with risk factors that include communicable and non-communicable diseases. However, poor data quality limits inferences and draws attention to the need for more information and validated measures of kidney function especially in the context of the growing burden of non-communicable diseases.

P108

Does the Knowledge of People With or Without Hypertension or Diabetes Differ About Risk Factors of CK?

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Introductions. Diabetes and hypertension are the leading causes of CKD. Public awareness about these risk factors and their effects is so important to control and prevention of CKD, so we decided to do a study to compare the knowledge of people with or without these diseases about risk factors of CKD.
Methods. In a descriptive and cross sectional study, the population which had participated in the campaign of World kidney Day in 2012 enrolled the study. The questionnaire was designed on the basis of knowledge of people about CKD risk factors such as diabetes, hypertension, hyperlipidemia, and familial history for these risk factors. The source of questionnaire was from www.kidney.org and validated by the standard process using Cronbach's alpha coefficient, with desirable level more than 0.7.
Results. Of 418 participants, 49% were male. The mean age was 29 ± 13 year old. 18 (4.3%) of 408 persons declared to be diabetic. 16 of 18 persons with and 283 of 390 without diabetes enumerated diabetes as a risk factor for CKD (88.8% vs. 72.5%, respectively; P > 0.05). 51 (9.8%) of 408 persons declared to be hypertensive. 27 of 51 and 234 of 367 of persons with and without hypertension enumerated hypertension as a risk factor for CKD (53% vs. 64%; P > 0.05). 35 (9.4%) of 373 persons declared to have hypercholesterolemia. 23 of 35 persons with and 181 of 338 without hypercholesterolemia declared hypercholesterolemia as a risk factor for CKD (66% vs. 47%, P > 0.05). 288 (70%) of 414 persons had at least one of these risk factors in their family. 277 of 288 persons with and 44 of 126 without family history knew about the effect of these risk factors on CKD (96% vs. 35%, P < 0.001).
Conclusions. We didn't find any significant difference between knowledge of people with or without diabetes and hypertension, but people with familial history of diabetes and hypertension had more information about CKD risk factors than those without familial history of these risk factors.

P109

Prevalence and Determinants of Chronic Kidney Disease Among an Iranian Adult Population

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Introductions. Chronic kidney disease (CKD) is a growing health problem worldwide with an increased risk for all-cause mortality. The aim of this study was to investigate the prevalence of CKD and its determinants in an adult population in southwestern of Iran.
Methods. In a population-based cross-sectional study, 1008 adults aged 20 years and more were enrolled from 2011 to 2012. There was a two-step screening protocol with 3-6 month intervals. We calculated the estimated glomerular filtration rate using the modification of diet in renal disease (MDRD) equation. CKD was defined as kidney damage using different screening methods, including imaging investigation, albuminuria, or/ and estimated glomerular filtration rate less than 60 ml/min/ 1.73m^2.
Results. The overall prevalence of CKD was 6.8 % (95% CI: 5.21%-8.41%) in the studied population considering stage of the disease: 0.9% stage1, 3.4% stage 2, 2.1% stage3, 0.1% stage 4, and 0.3% stage 5. Aged 60 and more was the strongest determinants for CKD (adjusted OR = 2.91, 95% CI: 1.60-5.31; P < 0.001). The second risk factor for the disease was male gender (adjusted OR = 2.10, 95% CI: 1.23-3.36; P < 0.05) followed diabetes (adjusted OR = 2.02, 95% CI: 1.13-3.62; P < 0.05).
Conclusions. Prevalence of CKD is relatively high in this area, particularly in people aged 60 and more than 60 years old, diabetic patients and male gender. Screening of the disease in high risk group will be suggested.

P110

Anti Apoptotic Effects of Ozone on Renal Ischemic Reperfusion in Rat

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Introductions. The acute renal failures following infarctions are one of the most important causes of death throughout the world. This study was undertaken to investigate the protective effects of ozone on apoptotic cell death of renal tubular cells during experimental renal ischemia-reperfusion (I/R) in rats.
Methods. 30 male Wistar rats were randomly assigned into 3 groups of 10 animals each, including: Sham I/R, I/R, ozone + I/R, renal ischemia was induced clamping the left renal artery. After 60 minutes of ischemia, the clamps were taken off and the animals underwent 3 days reperfusion. Ozone (15 mg/kg/min) was administration with orally form prior to reperfusion through in treatment groups. At the end of experiment, the rats were euthanized and histological sections from left renal tissue were prepared through Tunnel staining method.
Results. Apoptotic cells were counted under light microscope. The data obtained were statistically analyzed using ANOVA. Differences were considered statistically significant at $P < 0.05$. In group 2, ischemia-reperfusion caused occurrence of apoptotic cell death in renal tubular cells. There was a significant increase in the incidence rate of apoptosis of renal tubular cells in comparison with group 1 ($P < 0.001$). In groups 3 ozone (15 mg/kg) caused significant decrease in the number of apoptotic cells in comparison with group 2 ($P < 0.05$, $P < 0.05$, and $P < 0.001$; respectively).
Conclusions. This study therefore suggests that ozone may be a useful agent for the prevention of ischemia-reperfusion (IR)-induced apoptotic cell death of renal tubular in a dose dependent manner in the rats.

P111

Leontiasis Ossea a Rare Presentation of Secondary Hyperparathyroidism

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Introductions. Leontiasis ossea, a rare reported presentation of renal osteodystrophy which has been reported in less than 10 cases in the world. Severe hyperparathyroidism results in skeletal deformity which can change the patients face as a lion. Here we report a patient with advanced hyperparathyroidism with skeletal changes compatible with leontiasis ossea.
Case Presentations. A 34 years old Afghan man known case of end stage renal disease referred to our center with uncontrolled hypertension and dyspnea. He had toggled speech, mouth breathing and facial change, saddle nose, nares widening, increased introdontal space, and mandibular enlargement. Patient couldn't walk. His serum intact PTH level was 3199 mg/dL, Paranasal Sinus CT scan showed significant expansion of mandibular, maxillary and skull bone with multifocal lytic lesions and bone cortical thinning, pharyngeal soft tissue hypertrophy and two well defined mass in maxillary sinus with calcified rim. Parathyroid sonography reported two severe hypertrophied parathyroid glands with considerable coarse calcified pattern (right: 33 x 25 mm and left: 28 x 20 mm). Finally the patients' underwent total parathyroidectomy.
Conclusions. Nowadays severe hyperparathyroidism is a rare presentation in our dialysis units due to bone metabolism management based on guidelines. Unfortunately socioeconomic problem of this afghan immigrant ended to a disastrous skeletal presentation of renal osteodystrophy.

P112

A Survey of the Quality of Life in Patients Undergoing Hemodialysis and Its Association with Depression, Anxiety, and Stress in Sari, Iran

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Introductions. Hemodialysis patients face several physical and mental tension factors including depression, anxiety, and stress which could

decrease their quality of life. This study aimed to identify the relationship between quality of life (QOL), depression, anxiety, and stress in patients undergoing hemodialysis.

Methods. This descriptive, analytical study was conducted on 160 hemodialysis patients (80 male and 80 female) using convenience sampling at three hemodialysis centers in Sari, Mazandaran, Iran. Data collection was performed during three months using three questionnaires of demographic characteristics, DASS-21 and quality of life (SF-36). Collected data were analyzed using descriptive and inferential statistics.

Results. In this study, the mean age of patients was 50.8 ± 12.81 years, and 88.8%, 92.5%, and 85.6% of the subjects had severe depression, anxiety, and stress; respectively. Spearman correlation coefficient showed a significant inverse correlation between the physical and mental domains of SF-36 questionnaire with depression ($r = -0.38$, $r = -0.29$), anxiety ($r = -0.48$, $r = -0.45$), and stress ($r = -0.5$, $r = -0.57$); respectively ($P < 0.001$).

Conclusions. According to the results of this study, increased depression, anxiety, and stress could reduce QOL in hemodialysis patients. Therefore nurses and health care staff play a pivotal role in the identification and alleviation of these factors by using coping and support strategies to improve QOL in these patients.

P113

Effect and Safety of Alendronate on Bone Density in Patients with Chronic Kidney Disease

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Introductions. With decline of Glomerular Filtration Rate (GFR), a number of metabolic bone diseases such as osteoporosis are simultaneously caused. We evaluated the results of alendronate on bone density in patients with chronic kidney disease (CKD).

Methods. We evaluated two treatment regimens on bone density of 44 patients between 18-45 years old (22 in experimental and 22 in control group) in a controlled double-blind randomized trial. The experimental group was prescribed alendronate (10 mg), calcitriol (0.25 µg), and calcium carbonate (1500mg) daily. The control group was treated with the same regimen except for alendronate. The main aim of the study was evaluation of the changes in bone density, one year after treatment by dual energy x-ray absorptiometry technique.

Results. After completion of the trial, bone density decreased in all patients in the control group, but increased in the experimental group, in lumbar spine and femoral neck, 6.4% and 4.5%; respectively. Alendronate was well tolerated.

Conclusions. Alendronate is safe in these patients and increases the bone density in CKD stage 1 and 2.

P114

A Newly Diagnosed Sjogren Patient with First Presentation as Paralysis Due to Distal Renal Tubular Acidosis Mimicking Hypokalemic Periodic Paralysis

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Introductions. We report a 64-year old woman who experienced recurrent attacks of hypokalemic quadriparesis resulting from distal renal tubular acidosis (dRTA) as the first manifestation of sjögren syndrome, which was previously misdiagnosed as hypokalemic periodic paralysis (HPP).

Case Presentations. A 64-year old woman admitted with quadriparesis. She reported sudden onset of weakness of all four limbs and difficulty in getting out of bed on awakening in the morning without history of diuretics, diarrhea, vigorous exercise or a carbohydrate-rich meal on the preceding day. She had three similar attacks with the diagnosis of HPP. Vital signs were normal. Physical examination showed symmetrical weakness of both proximal and distal muscles in upper and lower limbs (2–3/5) with reduced deep tendon reflexes. ECG showed prolonged QT interval. Laboratory analysis was reported as blood glucose 115, sodium 138,

potassium 1.6, calcium 9.1, phosphorous 2.5, magnesium 2.3, chloride 116, blood urea nitrogen 17, creatinine 1.1, albumin 4.1, and hemoglobin 12.5. Arterial blood gas was PH 7.2, PCO_2 32, $HCO3^-$ 12, (normal anion gap metabolic acidosis). Thyroid function tests were normal. The urine analysis showed PH = 7.1 with PH meter and 4-6 WBC. In random urine sample: potassium 42, sodium 112, and chloride 138 (positive urine anion gap). A diagnosis of RTA was suspected according to hypokalemia, normal anion gap metabolic acidosis, positive urine anion gap, and high urine PH. Patient potassium level gradually increased to 3.8 and paralysis resolved completely with 10 meq/h potassium chloride. Using sodium bicarbonate (NaHCO3) loading test (1 mEq/kg/h, intravenous), the fractional excretion of NaHCO3 was 2.8%, at the serum NaHCO3 22, that established dRTA. Further history taking revealed that she had bouts of dry mouth for the previous 6 months. Immunologic studies showed positive antinuclear antibody (1:640), anti-SSA > 200 (normal < 15), anti-SSB > 200 (normal < 15), relatively low C3 = 82 (normal 90-18), and C4 = 13 (10-40). Other immunologic, viral tests and serum protein electrophoresis were negative. Finally the patient with the diagnosis of primary sjogren syndrome discharged.

Results. Attacks of hypokalemic paralysis resulting from dRTA in sjögren syndrome can precede the onset of typical sicca symptoms.

Conclusions. In the presence of dRTA, further investigations should be carried out to identify the underlying causes, particularly autoimmune diseases.

P115

Comparison of Urinary Level β2 Microglobuline, Cystatine C, and Microalbumin in Children with Acute Pyelonephritis With and Without Urinary Reflux

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Introductions. Acute pyelonephritis is one of the most important and common bacterial infections in infants and children. Although mortality rate of children with has been dramatically decreased in the past few decades, a large number of children will encounter to kidney scar and decreased functional of kidney. Using non-invasive urinary biomarkers with the aim of early diagnosis of kidney injury provide a rapid and secure tool for the physician. Therefore in this study, we attempted to evaluate and compare micro-albuminuria and urinary levels of cystatin C, **β**2 microglobulin, blood urea nitrogen (BUN), and creatinine in children with pyelonephritis with and without urinary reflux.

Methods. In this investigation, 61 children aged 2 months to 14 years with acute pyelonephritis who admitted in hospital were studied. Urine samples were evaluated by ELISA immunoassay method and urinary biomarkers including micro-albuminuria, cystatin C, **β**2 microglobulin, BUN, and serum creatinine were measured. In order to detect vesicoureteral reflux (VUR), after a negative urinary culture, cessation of fever and stabilizing patient vital signs and if patients were indicated, VCUG imaging was done.

Results. In present study it was observed that there is no significant relationship between patients' sex and VUR. Although the mean level of micro-albuminuria in patients with VUR was obviously higher than patients without VUR (109.58 ± 146.97 vs. 86.23 ± 23), its difference was not significant ($P > 0.05$). Also between two groups with and without reflux, no significant difference was seen in the cases of urinary levels of serum creatinine and BUN ($P > 0.05$, $P > 0.05$; respectively). However, the mean level of cystatin C in patients with reflux was significantly higher than patients without reflux (239.22 ± 196.15 vs. 66.92 ± 102.71; $P < 0.001$). Similarly, it was observed that the mean level of β2 microglobulin in patients with reflux was significantly higher than patients without reflux (4.95 ± 3.48 vs. 2.53 ± 2.71 μg/L; $P < 0.05$).

Conclusions. Finally, in the present study which evaluated 61 children with acute pyelonephritis, it was seen that among studied variables, only urinary levels of cystatin C and β2 microglobulin had significant difference between two groups of with and without VUR. Therefore these two variables could be used as two appropriate markers in order to predict disease progress into reflux.

P116

Assessment of Efficacy and Safety of Pentoxiphylline in Management of Erythropoietin-Resistant Anemia in End-Stage Renal Disease

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Introductions. One of the most important causes of erythropoietin-resistant anemia in end-stage renal disease (ESRD) patients is increased levels of inflammatory cytokines. In this study pentoxifylline, an anti-inflammatory, and anti-cytokine drug, with no significant side effects was used to manage anemia in ESRD patients.
Methods. Thirty nine ESRD patients with erythropoietin-resistant anemia were assigned to twogroups, the treatment, and the control groups. In the treatment group, 19 patients received erythropoietin, venofer, and pentoxifylline for six months. Patients in the control group just received erythropoietin and venofer. Hemoglobin (Hb), hematocrit (HCT), albumin, and quantitative C-reactive protein (CRP) were measured at the beginning of the study, monthly, and at the end of the study.
Results. Hb and HCT were significantly increased in the treatment group (9.33 ± 1.25 g/dL and 28.08 ± 3.88% at baseline; 11.22 ± 1.26 g/dL and 34.02 ± 3.72% at the 6th month; $P < 0.05$) but not in the control group. CRP was significantly decreased in the treatment group but no significant change occurred in the control group.
Conclusions. Pentoxifylline is effective in improvement of erythropoietin-resistant anemia in ESRD patients with no harm to hemodialysis patients.

P117

Frequency of Hypoglycemia in CKD Patients Treated with Insulin and Glibenclamide

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Introductions. CKD represents a challenge in the treatment of type 2 diabetic patients. There are many oral glucose-lowering drugs available for the treatment of type 2 diabetes mellitus, but therapeutic options for patients with moderate to severe CKD are still limited. Glibenclamide is inexpensive and accessible drug but due to the increased risk of hypoglycemia in patients with CKD, it is contraindicate. The aim of study was to compare risk of hypoglycemia among CKD patients using glibenclamide vs. insulin.
Methods. This retrospective cohort study included 168 patients with diabetes and CKD (stage ≥ 3) who were using insulin or glibenclamide. The frequency of symptomatic hypoglycemic episodes, antihypertension medication, hypoglycemic therapy regimens, and laboratory data were reviewed. The duration of follow-up was one years. Glomerular filtration rate (eGFR) was estimated by serum creatinine concentrations.
Results. Eighty patients were using glibenclamide, 70 patients insulin and 18 patients were using combination of insulin and glibenclamide. Male to female ratio was 1.95 (111 vs. 57). There is no statistically significant difference between the groups on age, gender, GFR, and BMI. Mean of FBS was 109, 115 and 149 mg/dL in glibenclamide, insulin, and combination group respectively. Mean of HbA1c was 7.3, 5.2, and 7.1 in glibenclamide, insulin and combination group respectively. There was no statistically significant difference ($P < 0.05$) between the three groups for any of these variables. 70.0%, 58.6%, and 83.3% of patients in glibenclamide, insulin, and combination group experienced hypoglycemic episodes. In patients with diabetes and stage ≥ 3 CKD frequent episodes of hypoglycemia in glibenclamide, insulin, and combination therapy group was not significantly different ($P > 0.05$).
Conclusions. It was found that glibenclamide do not pose a higher risk of hypoglycemia than insulin in patients with diabetes and stage ≥ 3 CKD.

P118

The Effectiveness of Stress Inoculation Group Training on Stress, Anxiety, and Depression of Hemodialysis Patients

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Introductions. The purpose of this study was to determine the effectiveness of Stress inoculation training on the stress, anxiety, and depression of hemodialysis patients.
Methods. Subjects were consisted of 64 patients undergoing of hemodialysis who were randomly selected from Amin and Aliasghar hospitals. These patients were randomly assigned to experimental (N=32) and control (N=32) groups. The experimental group received 8 weekly Sessions of stress inoculation training that the control group did not received it. It was hypothesized that training would decrease the stress, anxiety, and depression of the training group as compared with the control group. The DASS42 questioner was administered to both groups before and after training.
Results. The results of analysis of covariance showed that training significantly improved the stress, anxiety, and depression in the experimental group as compared with the control group. Also, compared with the control groups, the experimental group showed significantly lower scores on the stress, anxiety, and depression.
Conclusions. The result of research showed the stress inoculation training affected on the amount the stress, anxiety, and depression of hemodialysis patients and this method can be used with usual medicine care in improvement the stress, anxiety, and depression.

P119

Prevalence of Hepatitis B, C, and HIV Status of Anemia Cure and Frequency of Blood Groups in Patients Referred to Hemodialysis Center of Dezful Large Hospital in 2015

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Introductions. Hepatitis B and C are the most common viral hepatitis in patients with dialysis. Patients with chronic renal disorder that undergoing dialysis are at the high risk because of dialysis, frequently blood transfusion, kidney graft, and drug injection. So this study aimed to determine prevalence of hepatitis B, C, and HIV; status of anemia cure and of frequency blood groups in patients referred to hemodialysis center of Dezful large hospital in 2015.
Methods. In this descriptive- cross sectional survey, file of patients referred to hemodialysis center of Dezful large hospital that were undergoing blood tests monthly were studied. Blood transfusion was down for all patients who their hemoglobin were less than 9 gr. Data were collected by means of check lists containing age, gender, afflicted with hepatitis B, C, and HIV, hepatitis antibody titer, blood transfusion, kind of blood transfusion product, erythropoietin injection, and blood groups. This data were analysis with SPSS 18 software and descriptive statistics.
Results. All of patients in this center were 126.74 (58.73%) patients were male and other were female. Average age was 55.4 years. Prevalence of hepatitis B was 0.79%, hepatitis C was 0.79%, and HIV was 0%. Least and greatest hepatitis B antibody titer in last month were 15 and 569. 91.26% of patients had chronic anemia. 81.74% of them had injected erythropoietin, but just 34% of these patients had blood transfusion. All of them received low leukocyte blood. In blood groups most abundant were O^+ with 34.12% and A^+ with 24.6% and least abundant were O^- with 0%.
Conclusions. Erythropoietin injection instead of blood transfusion and progress in screening of blood products can justify the low prevalence of hepatitis B, C, and HIV. It recommended to be done more laboratory test to quantity other blood indexes like total iron, Ferritin and total iron binding capacity.

P120

Evaluation Urinary Endothelin Levels in Children with Vesicouretral Reflux

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Introductions. Urinary tract infection (UTI) is one of the most common bacterial diseases in children. It is acquired by an estimated 3-5% of the girls and 1% of the boys. UTI has been considered an important risk factor for the development of progressive renal disease and long-term complications. Vesicoureteral reflux (VUR) is a common finding in children who develop urinary tract infection (UTI) and prenatally diagnosed urinary tract dilatation as well as the relatives of the index patients. Children with VUR are believed to be at risk for ongoing renal damage with subsequent infections, resulting in hypertension and reduced renal function. VUR has become an exciting area for clinical, basic science, and translational research. The detection of VUR and renal scarring currently depends on imaging modalities with associated problems including radiation, invasiveness, and expenses. Various imaging and biochemical methods with different specificity and sensitivity rates have been introduced as substitute diagnostic tools for VCUG to identify VUR.
Methods. We evaluated urine concentrations of endothelin-1 in 81 infants aged 5 to 48 months who had indication for VCUG test. Infants were divided into 2 groups: group A, subjects with proven VUR (40 infants); group B, subjects without VUR (41 infants). UET-1 concentrations were determined. The data was evaluated by the tail-flick test.
Results. The UET-1 levels were significantly higher in VUR patients compared to the control group ($P < 0.001$). There were differences in UET-1 between patients with different VUR grades. The UET-1 level was significant higher in grade IV compared to the other grades. The grade III was different significantly compared to grade I and II too, however there was no difference between the grade II in comparison to infants with grade I. In addition, there were no relation between gender and age in children and UET-1 levels.
Conclusions. UET-1 increased in children with VUR grade I-IV and there is a relationship between the grades of VUR. UET-1 is a useful marker of VUR diagnosis and degree of VUR determination.

P121

Assessment of Blood Pressure in Primary Monosymptomatic Nocturnal Enuresis

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Introductions. Enuresis is defined as the repeated voiding of urine into bed at least twice a week for at least 3 consecutive months in a child who is at least 5 years of age. Primary enuresis occurs in children who have never been consistently dry through the night, monosymptomatic enuresis has no associated daytime symptoms. Systolic and diastolic blood pressures normally increase gradually 1 and 18 years of age. In children, hypertension (HTN) is defined as a blood pressure (BP) higher than the 95th percentile for age, gender, and height. Essential HTN is now the most common cause of HTN in children. Renal disease is the most common cause of secondary HTN in children. Most children with HTN have no symptoms; the only way to diagnose HTN is to measure the BP.
Methods. In this case-control study, we selected 100 children with MPNE based on DSM IV criteria as case and 100 children without MPNE as control group, who were all in Amir-Kabir hospital, Arak, Iran. The sample size calculation was extended our sample size to get better visualization. Our exclusion criteria were: 1) children with known underlying kidney and other organ disease 2) children with psychological disorders or nervous system 3) children whose parents did not cooperate fully. The control group were selected from pediatric with other complaints like common cold considering the exclusion criteria. After primary evaluation regarding exclusion/inclusion criteria, basic information (age, sex, etc.) was recorded. Standard procedures for the measurement of blood pressure were used in each of children. Three blood pressure measurements were obtained by trained personnel on the right arm in the sitting position,

and standard mercury sphygmomanometers were used, with appropriate cuff sizes. Systolic BP was measured at the first appearance of a pulse sound (korotkoff phase1) and Diastolic BP at the disappearances of the pulse sound (Korotkoff phase 5). We used the averaged of the three measurements from each subject for analysis. Pre-hypertension was defined as resting systolic and/or diastolic BP values between the 90th and 95th percentiles and as hypertension if the readings equaled or exceeded the 95th percentile according to gender, age, and height. Standing height was measured with the shoes removed and the child facing away from the wall, with the heels, buttocks, shoulders, and head touching the wall and the child looking ahead and the external auditory meatus and lower margin of the orbit aligned horizontally. An average of three measurements was recoded to the nearest 0.1 cm. In this study, a mercury sphygmomanometer with a cuff that covers approximately two thirds of the upper part of the arm used for blood pressure measurement. An appropriate sized cuff has an inflatable bladder that is at least 40% of the arm circumference at a point midway along the upper arm. The inflatable bladder should cover at least two thirds of the upper arm length and 80-100% of its circumference. Systolic pressure is indicated by appearance of the 1st korotkoff sound and diastolic pressure has been defined by consensus as the 5th korotkoff sound. Blood pressure in two times, 08:00 PM and 12:00 AM was measurement. Hypertension defined as average systolic blood pressure and/or diastolic blood pressure that is > 95th percentile for age, sex, and height on > 3 occasions. Prehypertension was defined as average SBP or DBP that are > 90th percentile but < 95th percentile. Results were analyzed using SPSS-17 by means of descriptive analyzes for basic information and Chi-square for qualitative variables .p-value of lower than 0.05 was considered meaningful in our comparisons. This study was confirmed by ethics committee of Arak university of medical sciences and in all stages of this study, we were loyal to Helsinki declaration principles and a written consent was obtained from all of participants and they were free to exit the study by their will.

Results. Overall 200 children (100 as case and 100 as control group) were selected for our study. the DBP in nighttime in 4 children with MPNE and in control group in 3 children between 90-95% ($P > 0.05$). The DBP in children with MPNE in daytime in 9 children and 6 children in control group was between 90-95% ($P > 0.05$). The DBP in nighttime and daytime did not differ between the two groups. The SBP in nighttime in the MPNE was between 90-95% in 41 children and control group was 6 children ($P < 0.001$). The SBP in daytime in 11 children with MPNE and in control group 14 was between 90-95% ($P > 0.05$).

Conclusions. In summary nocturnal systolic and diastolic BP levels were observed to be significantly higher in enuretic patients compared to controls. Thus, based on our findings, it can be concluded that a disorder in the circadian rhythm of BP may play a role in the pathophysiology of nocturnal enuresis. Further studies will be necessary to clarify the causative relationship between the hypertensions and nocturnal enuresis in children. SBP were significantly higher in nighttime in children with enuresis. These abnormalities of blood pressure regulation may reflect autonomic nervous system dysfunction and pathogenesis of MPNE.

P122

MiRNA-621 Strongly Differentiates Hypertensive from Normotensive SLE Patients

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Introductions. Hypertension is one of the clinical manifestations of SLE and lupus nephropathy. The aim of this study was to compare normotensive and hypertensive lupus patients for their miRNA profiling.

Methods. 16 patients with SLE (mean age = 39.5 ± 12.0, all female) were studied. 7 out of 16 patients were hypertensive. After collecting blood samples and isolating the free miRNAs in the serum, miRNA profiling was performed through microarray analysis. MiRNAs that were expressed differently in normotensive and hypertensive

patients were further evaluated by Target Scan and Pictar bioinformatics programs in order to target prediction.
Results. Among these miRNAs, hsa-mir-621 was sharply down regulated only in hypertensive patients (FC = 26.38, P < 0.001). According to the target prediction results hsa-mir-621 was associated with Kallikrein-related peptidase 9 (KLK9) gene (P < .001). Systematic name fold change P value active sequence chromosome no potential target gene P value hsa-mir-621 26.38 < 0.001 AGGTAAGCGCTGTTGC 13 KLK9 0.0008.
Conclusions. This study suggests that miRNA-621 and Kallikrein-related peptidase 9 (KLK9) may play a role in the pathophysiology of blood pressure in systemic lupus erythematosus. However, larger studies with increased number of patients are needed to confirm this interesting finding, miRNA-621 can be an attractive biomarker for potential therapeutic target for hypertension in SLE patients.

P123

Prevalence of Nondipping Hypertension

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Introductions. Hypertension is one of the risk factors for cardiovascular disease. Most of the normotensive or hypertensive subjects have a pronounced diurnal rhythm of blood pressure. Blood pressure falls to its lowest level during the first few hours of sleep, and there is a marked surge in the morning hours coinciding with the transition from sleep to wakefulness. The average difference between waking and sleeping systolic and diastolic pressure is normally about 10% to 20%. This is referred to as a dipping pattern. In some subjects, whether they have normotension or hypertension, the normal nocturnal fall of blood pressure is diminished (< 10%), and this is referred to as a nondipping pattern that is only detected by ambulatory blood pressure monitoring. There is some evidence that loss of the nocturnal decline in blood pressure has been associated with increased risk of cardiac, renal, and vascular target organ injury. Thus, this study was performed to identify the prevalence of nondipping pattern and related factors.
Methods. We evaluated 151 subjects in our center from 2013 to 2014. They had been referred to hypertension clinic for the determination of appropriate management. 24-hour-noninvasive ambulatory BP monitoring was performed. Clinical and demographic characteristics of the patients were obtained.
Results. There were 67 male and 84 female with mean age 51.6 years and mean body mass index 27.4 kg/m^2. Nondipper pattern was observed in 71.5% of patients. Mean glomerular filtration rate was 87.1 mL/min that had significant reverse statistical association with nondipping pattern. There was no significant association between nondipping pattern with age, sex, BMI, metabolic syndrome, calcium, lipid profile, uric acid, TSH, premature familial history of cardiovascular disease, smoking, Epworth scoring, white coat hypertension, and type and time of drug use.
Conclusions. This study suggested nondipping pattern is prevalent and has significant statistical association with impairment of kidney function.

P124

The Effect of Electronic Education and Short Message Service on Hemoglobin A1C, Interdialytic Weight Gain and Blood Pressure in Diabetic Patients Undergoing Hemodialysis

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Introductions. Interdialytic weight gain control and reaching dry weight is a critical issue for patients undergoing hemodialysis. Not reaching the desired dry weight of the patient leads to consequences, such as hypertension, acute pulmonary edema, congestive heart failure, left ventricular hypertrophy, and increased complications during dialysis, resulting in increased mortality of the patients. In diabetic patients good control of DM lead to better control of interdialytic weight gain. Education is an important issue to self-care and control of DM. So this study was done to determine the effect of

electronic education and short Message Service on hemoglobin A1C, interdialytic weight gain, and blood pressure in diabetic Patients undergoing hemodialysis.

Methods. This was a quasi-experimental study. 100 eligible patients entered the study via convenient sampling. The patients were randomly assigned to two groups, control and intervention group. For control group, routine education and for intervention group electronic education for three months was trained. Before and after the intervention measured fasting blood sugar and HbA1c, interdialytic weight gain, and blood pressure in two groups. A questionnaire was used to collect data. Data analysis was performed using paired t test, Student's independent t test, descriptive statistics, and SPSS software version 20.

Results. Patients in the two groups regarding quantitative variables (age, duration of hemodialysis) and qualitative variables (gender, type of vascular access, and antihypertensive drugs) did not have a statistically significant difference in the two groups and were similar ($P > 0.05$). Fasting blood sugar, HbA1c, interdialytic weight gain, and systolic blood pressure significantly decreased in intervention group ($P < 0.001$). In the control group, there was no significant change in FBS and HbA1c, interdialytic weight gain, and blood pressure ($P > 0.05$). Mean diastolic blood pressure in the two groups did not have a statistically significant difference ($P > 0.05$).

Conclusions. Electronic education improves the self-care of diabetic patients in the intervention group after education that has caused improve the mean FBS and HbA1c, interdialytic weight gain, and systolic blood pressure. According to the benefits of electronic education and SMS, using and planning of this method is recommended.

P125

The Effect of Treatment with N-Acetylcystein on hsCRP in Patients on CAPD, A Self-Controlled Clinical Trial

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Introductions. CKD is one the most important cause of mortality and morbidity in whole the world. These patients are at increased risk of atherosclerosis and CVD, which were associated to systemic inflammation and oxidative stress, directly. NAC is known as an anti-oxidant with anti-inflammatory effects, which may reduce hsCRP level in CAPD patients. We aimed to evaluate the effect of N-acetylcystein treatment on hsCRP in Patients on CAPD.

Methods. In this self-controlled clinical trial, 50 adult patients on CAPD for at least 6 m, from peritoneal dialysis clinic of Shahid Sadoughi hospital of Yazd, with no inflammatory disease, active infection, hepatitis B, and C. Peritonitis and CRP higher than 50 mg/L were treated with oral NAC 600 mg × 2 daily for 8 weeks. They were divided to 2 groups: CRP lower than 5 mg/L and CRP between 5 to 50 mg/L. hsCRP were measured before and after treatment. The data collected in a questionnaire designed by the researcher and then the collected data were statistically analyzed.

Results. 50 patients were enrolled. The mean age of patients was 56.10 ± 13.17. 10 (12%) patients were excluded from this study and 40 patients remain (22 male and 18 female) in 2 groups (18 patient in group of CRP more than 5 mg/L and 22 patient in group of CRP lower than 5 mg/L). A significant decreased in hsCRP level after NAC treatment was seen in both groups and generally ($P < 0.001$). Female patients presented with a significant hsCRP reduction than male patients reduction ($P < 0.05$). There were no significant correlation between this reduction and age, and duration of CAPD.

Conclusions. This study showed that treatment with NAC can reduce hsCRP level in patients on CAPD, significantly. The results showed that this reduction is associated to gender (female), but there is no correlation between this reduction and age, and also duration of CAPD.

P126

Therapeutic Efficacy of Hydrochlorothiazide in Primary Monosymptomatic Nocturnal Enuresis in Boys with Idiopathic Hypercalciuria

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Introductions. Since idiopathic hypercalciuria (IHC) might be one of the causes for nocturnal enuresis (NE) and hydrochlorothiazide (HCT) ameliorates hypercalciuria, we assessed therapeutic efficacy of HCT in boys with primary monosymptomatic NE (PMNE).
Methods. This research was a randomized double-blind, placebo-controlled clinical trial. Two hundred 6-12 years old boys, who were followed in pediatric nephrology outpatient clinics of referral hospital in Markazi Province of Iran, were recruited. All patients had IHC and PMNE and were randomly divided into two equal groups (intervention and control groups). The control group received conservative measures for PMNE and placebo and the intervention group, in addition to conservative measures, received 1 mg/kg/d hydrochlorothiazide tablet as morning dose. Patients were followed for 4 months for the number of wet-night episodes.
Results. The mean numbers of wet-nights episodes in the first (intervention = 8.34 ± 8.54, control = 9.1 ± 9.3; $P > 0.05$), second (7.1 ± 7.3, 7.9 ± 8.1; $P > 0.05$), third (7.8 ± 8, 7.9 ± 8.1; $P > 0.05$), and fourth (4.9 ± 5.1, 5.9 ± 6; $P > 0.05$) months were not significantly different between the two groups. However, the decrease in the average wet-night episodes during the 4 months of treatment in the intervention group ($P < 0.05$) was significant in contrast to the control group ($P > 0.05$). All patients who were treated by hydrochlorothiazide became normocalciuric. However, in 21 patients the dose was increased to 2 mg/kg/d.
Conclusions. HCT can be effective in the treatment of children with PMNE. However, due to the lack of clinical studies and also unknown mechanism of the association between IHC and NE, further studies are recommended.

P127

The Association Between Hyponatremia and Reflux-Related Renal Injury in Acute Pyelonephritis

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Introductions. The kidney regulates sodium balance and is the principal site of sodium excretion. Sodium is unique among electrolytes because water balance, not sodium balance, usually determines its concentration. Although water balance is usually regulated by osmolality, volume depletion stimulates thirst, renal protection of water, and ADH secretion. Volume reduction has priority over osmolality; volume depletion stimulates ADH secretion, even if a patient has hyponatremia. The aim of this study was to consider scar nephropathy in children with UTI and hyponatremia and compare it with children without hyponatremia.
Methods. 200 children with pyelonephritis were included in this case–control study as case and control groups, respectively. Subjects were selected from children referred to the pediatric clinic of our hospital in Arak, Iran. Case group included children with hyponatremia and UTI (with VUR) and control group included children with UTI (With VUR) and normal serum sodium. Data was analyzed using SPSS ver.18.
Results. The prevalence of reflux nephropathy was 5% in control group and 23% in case group. Distribution of reflux nephropathy was not homogenous in the two groups based on chi-square test ($P < 0.001$). Mean grades of VUR were 2 ± 3 and 3 ± 4 for control and case groups, respectively and no significant difference was observed between the two groups ($P > 0.05$). Based on logistic regression test, there was a significant association between both case and control groups and the occurrence of reflux nephropathy was 2.6 times more in case group than the control group (OR = 2.58, $P > 0.001$). The mean age, birth weight of all children and mothers' age at birth were 8.12 ± 1.69 year, 2866.10 ± 617.77 gr and 25.32 ± 5.64 years; respectively. Mothers age at birth ($P < 0.05$), maternal education ($P < 0.001$), type of delivery ($P < 0.001$), and household incomes ($P < 0.05$) were significantly different between the case and control groups. The average age of children with hyponatremia and control group were 2.8 ± 1.81, and 3.37 ± 1.59 years, respectively; which the difference was not statistically significant ($P > 0.05$). The results showed a significant association between birth weight, gestational age, marital status, type of delivery, and reflux nephropathy ($P < 0.001$, for all). In the two groups, potassium ($P > 0.05$), $HCO3^-$ ($P > 0.05$), and GFR ($P > 0.05$) were not significantly different. VUR grading in the two

groups was similar.
Conclusions. In our study, there was a definite association between hyponatremia and reflux nephropathy. Hyponatremia in children with reflux nephropathy was significantly more common than children without reflux nephropathy. The observed correlation between reflux-related injury and hyponatremia necessitates evaluation of electrolytes in children with pyelonephritis. It is recommended to perform further studies with larger sample size.

P128

Hemodialysis or Peritoneal Dialysis, Which One Is Preferred?

Noshad Hamid

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Introductions. Ever since peritoneal dialysis (PD) was introduced as a form of renal replacement therapy, its efficacy and complications have been compared with that of hemodialysis (HD). The aim of this study was to determine the efficacy and outcome of PD in comparison to HD in our region.
Methods. We compared 60 patients on PD with 60 matched patients on HD in Tabriz's Sina hospital during the period 2012–2014. The technique, patients' survival and quality of life were compared by means of a health-related quality-of-life questionnaire (GHQ-28).
Results. There was no significant difference in the mean age and duration of dialysis between patients on PD and HD. Survival of diabetic patients was better with HD than PD, but in non-diabetic patients, there was no difference in the survival rates between the two groups. Among patients on PD, diabetics had a 25% higher mortality rate and non-diabetic patients had a three percent higher mortality rate than their corresponding counterparts on HD. In all four axes of the questionnaire, i.e. psychophysical dysfunction, stress and sleep disorders, social dysfunction and major depression, PD patients had lower scores than HD patients ($P < 0.001$, $P < 0.001$, $P < 0.05$, and $P < 0.001$; respectively), indicating that patients on PD had a better quality of life compared to those on HD.
Conclusions. In this study, technique, patients' survival and their quality of life were better on PD than on HD. However, survival and mortality of diabetic patients on HD were better than those on PD.

P129

Comparison of the 3-year Outcome of Peritoneal Dialysis Patients With and Without Metabolic Syndrome

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Introductions. Cardiovascular diseases have an important role on mortality of ESRD patients. There are several factors that cause atherosclerosis among these patients such as uremia and dialysis products, increased risk of hypertension, and chronic inflammation that can lead to metabolic syndrome. Metabolic syndrome is the most important risk factor in cardiovascular diseases. This study was done to compare the 3-year outcome of peritoneal dialysis patients with and without metabolic syndrome.
Methods. This is a historical cohort study that was done in the ward of peritoneal dialysis at Alzahra university hospital in Isfahan. In this study, all patients who participated in previous study (prevalence of metabolic syndrome among peritoneal dialysis) in 2009 were selected; and necessary information such as previous numbers of hospitalization due to cardiovascular diseases, mortality due to cardiovascular diseases, and myocardial infraction was achieved from hospital records and entered in special check lists. Finally the data entered in computer and analyzed by SPSS soft ware.
Results. There were 130 patients on peritoneal dialysis during 2010 to 2013. One patient because of incomplete data and 2 patients because of transferring to another province were excluded. Of 127 left patients, peritoneal dialysis in 47 (37%) was continued, 15 (11.8%) were done transplantation, 13 (10.2%) were shifted to hemodialysis and 52 (40.9%) died. 92 (72.4%) had metabolic syndrome and 35 (27.6%) did not. Frequency of mortality among

patients with and without metabolic syndrome was 52 and 40 (43.5% vs. 34.3%) respectively, and according to chi square test, mortality rate in metabolic syndrome group was higher than the non-metabolic syndrome group ($P < 0.001$).

Conclusions. Patients on peritoneal dialysis are considerably susceptible to metabolic syndrome and prevalence of this disorder is high. Thus, peritoneal dialysis patients with metabolic syndrome may have atherosclerotic risk factors and high mortality rate compared to patients without metabolic syndrome. As, surveillance of these patients is necessary and a suitable routine evaluation must be done for all patients on peritoneal dialysis.

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ABSTRACTS

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The Effect of Valsartan on Oxidative Stress in Alleviation of Cyclosporine Nephrotoxicity

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Introductions. Nephrotoxicity side effect of immunosuppressive drug Cyclosporine-A (CsA) is a major problem in transplant medicine. CsA nephropathy is multifactorial process but oxidative stress has an important role in its pathogenesis. It has shown that valsartan (Val) has renoprotective effects but except blood pressure lowering, the molecular mechanism responsible for the renal protection is largely unknown. The aim of this study is evaluation of Val effect in preventing of CsA nephropathy via probable decreasing in oxidative stress.
Methods. 32 Sprague-Dawley rats were divided into four groups: group A (Control) received daily subcutaneous injection of vehicle (1 mL/kg of olive oil) for six weeks, group B (CsA) received subcutaneous injection of CsA diluted in olive oil (30 mg/kg/d) for six weeks, group C (CsA + Val) received both CsA (30 mg/kg/d, subcutaneous injection), Val (30 mg/kg/d, in drinking water) for six weeks, and group D (Val) received administration of Val (30 mg/kg/d, in the drinking water) for six weeks. After the administration period, following analyses were performed on the serum samples of the rats. 8-hydroxydeoxyguanosine (8-OHdG) and malondialdehyde (MDA) levels as markers of oxidative stress, were measured by enzyme-linked immunosorbent assay (ELISA) and spectrophotometrically respectively. Serum urea and creatinine levels were measured by autoanalyzer.
Results. The rats received CsA (group B) were detected to have significantly ($P < 0.05$) higher serum 8-OHdG, MDA, urea, and creatinine levels in comparison with Val-treated rats (groups C and D) and also controls. Serum urea and creatinine levels were positively correlated with the oxidative stress markers.
Conclusions. Administration of Val may lead to lowering the nephrotoxic side effect of CsA via decreasing in oxidative stress.

O302

Comparison Between Three Dosages of Thymoglobulin Used as a Short-Course for Induction in Kidney Transplantation

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Introductions. Thymoglobulin is used effectively as an induction agent in kidney transplantation, but despite its extensive clinical use, the ideal dose and duration of therapy are still empirical in many centers where various protocols exist, and over-immunosuppression remains a concern. We evaluated the safety and complications with three different thymoglobulin regimens in adult kidney transplant recipients (KTR).
Methods. In an attempt to better delineate the efficacy and complications with Thymo, as well as its safety profile, we planned a study in which thirty KTR received a 3-day thymoglobulin-based induction of 1.5 mg/kg/d while thirty received 2 mg/kg/d for three days and thirty patients received 4.5 mg/kg bolus, in addition to maintenance immunosuppression. Renal function, infections,

and other complications were monitored based on monthly laboratory data for a year.
Results. At the end of first month, GFR was better in 1.5 mg/kg /d x 3days group ($P < 0.05$) and overall CMV infection noted significantly lower in this group ($P < 0.05$). Although no significant difference was found between type of rejection in these three groups, but patients in 1.5 mg/kg x 3 days group showed higher grade of rejection characteristics in renal biopsies ($P < 0.05$).
Conclusion. A short-course (3-day) induction therapy with 1.5 mg/kg/d of thymoglobulin appears to be a practical, safe, and efficacious strategy for standard initial immunosuppression in adult KTR. Longer follow-up and larger trials may be necessary to evaluate further the significance of these findings.

O303

Resistance to Erythropoietin Stimulating Agents Among Hemodialysis Patients in Tehran

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Introductions. Anemia is a common complication in maintenance hemodialysis patients, which has been treated by erythropoiesis-stimulating agents (ESAs). ESA hyporesponsiveness is due to a wide range of factors including iron deficiency, inflammation, severe hyperparathyroidism, inadequate dialysis, and the effect of Angiotensin-converting enzyme inhibitors (ACEI) and angiotensin receptor blockers (ARB). We evaluated point-prevalent hemodialysis patients to assess the prevalence of erythropoietin hyporesponsiveness, and the associated factors.
Methods. It was a multicenter cross-sectional study in 24 hemodialysis centers in Tehran province. ESA hyporesponsiveness was defined as an erythropoietin responsive index (ERI: the dose of epoetin (in IU/week) divided by Hb and dry weight) more than 10 IU/kg/wk/ g/dL. The prevalence of ESA hyporesponsiveness and associated factors were assessed based on the 3 consequent monthly laboratory data.
Results. During the study period, 1224 hemodialysis patients were evaluated (59.5% male and 40.5% female with mean age of 57.5 ± 15 years). ESA hyporesponsiveness was observed in 52.3% of patients. Presence of diabetes, dialysis adequacy, iron status, CRP level, and PTH level were not significantly different among hyporesponsive and responsive patients. Patients with BMI < 20 kg/m^2 were more likely to be hyporesponsive. ACE inhibitors and ARBs and statin usage were more common in hyporesponsive group ($P< 0.05$). Among patients with positive CRP, serum albumin tends to be lower and statin usage was more prevalent.
Conclusion. Higher incidence of ACE inhibitor and ARBs among hyporesponsive patients might be due to inhibition of EPO release and increased plasma levels of N-acetyl-serylaspartyl- lysyl-proline. More common use of statin might be an intervention for hyporesponsiveness not the cause of it. A trial of ACE inhibitor / ARB cessation seems to be beneficial in ESA hyporesponsive patients.

O304

Role of Urine Neutrophil Gelatinase-Associated Lipocalin as Emerging Biomarker of Acute Renal Failure Following Coronary Artery Bypasses Surgery

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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 urine neutrophil gelatinase-associated lipocalin (uNGAL) is an early biomarker for AKI in patients after CABG.
Methods. 29 adult patients (22 men, 7 women; mean age: 61.4 ± 7.7 years) were prospectively studied in a single center from Jun to Dec 2013. uNGAL levels were measured by ELISA immediately before incision and 2 and 6 hours after surgery.

AKI was defined as increase in serum creatinine from preoperative values by 25% or greater.
Results. AKI developed in 13 patients (44.8%). The mean urinary NGAL concentrations in patients who developed AKI were not significantly different after surgery compared with patients who did not develop AKI ($P > 0.05$).
Conclusions. Incidence of AKI in patients after cardiac surgery is high. Likewise, uNGAL is not a sensitivite and specific early predictive biomarker of AKI after CABG.

O305

NPHS1 Gene Mutation in Children with Nephrotic Syndrome in Northwest Iran

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Introductions. Idiopathic nephrotic syndrome (NS) is the most common glomerular disease in childhood that is usually treated by systemic steroid, and categorized as steroid sensitive NS (SSNS) versus steroid resistant NS (SRNS), based on disease response to this treatment. Mutation in NPHS1 gene has been reported in children with SRNS and few cases of SSNS. The aim of this study is to evaluate NPHS1 gene mutation in children with idiopathic NS (both SSNS and SRNS) in Northwest Iran.
Methods. This is a cross-sectional analytical study on twenty unrelated children from Iranian Azeri population, known cases of idiopathic NS including 10 cases of SRNS (5 males and 5 females, all with renal histopathologic study that reported as FSGS) and 10 cases of SSNS (7 males and 3 females) were investigated for NPHS1 gene mutation. DNA was extracted from patients' peripheral blood and NPHS1 gene molecular analysis was performed by PCR and direct sequencing method using standard primers.
Results. Mutations in NPHS1 gene were found in 6 cases of SSNS (including 3 homozygous and 3 heterozygous mutations) and also in 8 cases of SRNS (including 5 homozygous, one compound heterozygous, and 2 heterozygous mutations). Overall 6 different mutations were detected in NPHS1 gene, consisted of one deletion, one insertion, one non-sense, and 3 missense mutations. Mutations in exon 4 and 27 were exclusively detected in SRNS patients.
Conclusions. Mutation in NPHS1 gene could occur in both SSNS and SRNS patients; however, considering higher incidence of heterozygous mutations in SSNS, the milder molecular derangement and minimal pathology (milder phenotype) in these cases might be the reason for steroid responsiveness.

O306

Mean Platelet Volume as a Predictive Marker for Poor Prognosis of Acute Renal Failure in children

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Introductions. Acute renal failure (ARF) is a clinical syndrome in which a sudden deterioration in renal function results in the inability of the kidneys to maintain fluid and electrolyte homeostasis. A classification system has been proposed to standardize the definition of acute kidney injury in adults. These criteria of risk, injury, failure, loss, and end-stage renal disease were given the acronym of RIFLE. Our goal was to study the mean platelet volume (MPV) as a prognostic predictor of ARF in children. Mean platelet volume (MPV) is a machine-calculated measurement of the average size of platelets in blood and typically included in blood tests as part of CBC (Complete Blood Count). Since the average platelet size is larger when the body is producing increased numbers of platelets, MPV can be used to make inferences about platelet production in bone marrow or platelet destruction problems.
Methods. This was a Case-Control study. The study population consisted of 217 children admitted in

Amir-Kabir hospital with ARF or renal azotemia due to viral gastroenteritis with moderate and severe dehydration. All patients had been followed up for six months. The patients were 59 (risk), 57 (injury), 46 (failure), 43 (loss), and 1 (ESRD). Data was recorded in the checklists and analyzed using SPSS20 software.

Results. Platelet counts were significantly higher and MPV values were significantly lower in patients with criteria of loss and failure during the follow-up compared to controls. Erythrocyte sedimentation rate and c-reactive protein values significantly decreased in patients with ARF after the treatment compared to baseline; whereas, MPV values increased. MPV values were negatively correlated with ESR and WBC and platelet counts. The use of MPV in the evaluation of prognosis in ARF has never been previously evaluated. During the acute stage of ARF with criteria of loss and failure, MPV values were lower compared to other criteria.

Conclusions. MPV is a fast and reliable measurement with considerable predictive value for prediction of prognosis in acute renal failure. Therefore, we suggest it for diagnosis of acute renal failure.

P201

Studying the Association Between Atorvastatin and Total Plasma Homocysteine Levels in Renal Transplant Recipients in North of Iran

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Introductions. Statins improve prognosis in patients with coronary heart diseases by decreasing the incidence of vascular events. Excess prevalence of hyperhomocysteinemia, an independent risk factor of cardiovascular diseases, has been observed in stable renal transplant recipients (RTR). The objective of our study was to evaluate the association between plasma total homocysteine (tHcy) levels and atorvastatin in RTRs.
Methods. We performed a retrospective cross-sectional study in 148 cyclosporine treated stable RTRs. We compared tHcy level in RTRs with and without atorvastatin.
Results. Mean tHcy levels were lower in patients with atorvastatin (20-40 mg/d) compared to nonusers (15.06 ± 5.65 µmol/L, 17.91 ± 10.85; $P < 0.05$). The comparison of the group of 86 patients with atorvastatin and 62 non-users revealed that those subjects with atorvastatin were older, with higher HDL levels, eCrCl, and BMI. They were more likely to have diabetes, higher systolic blood pressure, and CsA trough level (C0). The association between lower tHcy levels and atorvastatin was confirmed in the multivariate regression model ($P < 0.05$). However tHcy levels were negatively associated with serum folate ($P < 0.001$) and vitamin B12 levels ($P < 0.001$) and positively with serum BUN ($P < 0.001$) and diastolic blood pressure ($P < 0.05$) as well.
Conclusions. These data support the association between lower tHcy levels and atorvastatin usage in RTRs. Further clinical trials are recommended to clarify homocysteine lowering effect of atorvastatin.

P202

Glutathione S-Transferase (GSTM1 and GSTT1) Gene Polymorphisms in Relation with the Risk of Post Transplantation Diabetes in Iranian Patients

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Introductions. Diabetes after transplantation is a serious complication in transplant recipients which is associated with an increased production of reactive oxygen species (ROS). Oxidative stress is the result of accumulation of free radicals in tissues which specially affects beta cells in pancreas. Glutathione S-transferases (GSTs) are a family of antioxidant enzymes that include several classes of GSTs and have important role in decreasing of ROS species and act as a kind of antioxidant defense. To investigate the association between GSTM1 and GSTT1 polymorphism with post liver transplant diabetes, we investigated the frequency of GSTM1 and GSTT1 genotypes in liver transplant patients with diabetes and patients without diabetes as controls.
Methods. The genotypes of GSTM1 and GSTT1 were determined in 52 clinically documented liver transplant diabetic patients and 169 non-diabetic patients (as controls) by multiplex polymerase chain reaction (multiplex-PCR).
Results. The frequency of GSTM1-null genotype was (62.49%) higher in liver transplant diabetic patients than in controls (50.88%) but it was not statistically significant ($P > 0.05$). Moreover, the frequency of GSTT1 genotypes was not significantly different comparing both groups (23.73% vs. 20.71%).
Conclusions. Our results indicated that GSTM1 and GSTT1 genotypes might not be involved in the pathogenesis of post liver transplant diabetes in Iranian patients but it needs more researches and greater sample numbers.

P203

Augmentation Cystoplasty Before Kidney Transplantion, A Comparison Between Enterocystoplasty and Ureterocystoplasty with Control Group

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Introductions. In this study we compared two surgical methods of bladder augmentation, enterocystoplasty (EC) and ureterocystoplasty (UC) before kidney transplantation, and we compared the outcome of these two methods with recipients of kidney who had normal bladder function.
Methods. During a 26-year period (1988-2014) 2100 renal transplantation were performed in our center by a fixed team. In 22 patients (mean age 19.51 years) enterocystoplasty (group A) and in 12 patients (mean age 12.30 years) ureterocystoplasty (group B) were performed before renal transplantation. These two groups were compared with a control group of 34 recipients with a normal bladder (group C, mean age 17.63 years) for kidney function, graft and patient survival and episodes of urinary tract infection.
Results. There was normal graft function in 15, 10, and 31 patients of groups A, B, and C; respectively. Over the mean follow up time of 92, 73, and 82 months. Mean serum creatinine in follow up was 1.58 ± 0.35, 1.42 ± 0.15, and 1.31 ± 0.51 mg/dL in groups A, B, and C; respectively. There were not any statistically significant differences among these 3 groups in 1, 5, and 10 year graft and patient survivals. Episodes of febrile UTI requiring hospital admission were 23, 7, and 2 in groups A, B, and C; respectively. UTI and urosepsis were significantly more frequent in group A than group B ($P < 0.05$) and group C ($P < 0.001$), but there was not a significant difference between groups B and C ($P > 0.05$).
Conclusions. Although augmentation cystoplasty (AC) with segment of intestine or dilated ureter is a safe and effective procedure for reconstruction of lower urinary tract before renal transplantation, in recipients with enterocystoplasty the frequency of febrile UTI and urosepsis is high and sometime it is dangerous. In long term there is no significant difference in graft function among the 3 groups. As a result augmentation cystoplasty of both methods is recommended before renal transplantation for reconstruction of lower urinary tract depending on specific condition of recipient.

P204

Association of Metabolic Syndrome and Serum FGF21 Levels in Kidney Transplant Patients

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Introductions. Fibroblast growth factor 21 (FGF21) is a metabolic Regulator with multiple beneficial effects on glucose and lipid homeostasis and insulin sensitivity. This study aimed to investigate the relationship between its serum levels and metabolic syndrome in kidney transplant recipients.
Methods. We performed a cross-sectional study on 86 stable renal transplant recipients to detect relation between serum FGF21 level and metabolic syndrome (MS) between October 2014 and Mach 2015. This syndrome was diagnosed according to the Asian national cholesterol education program–adult treatment panel III (NCEP-ATPIII) criteria. Patients with past history of Diabetes mellitus were excluded.
Results. There were 43 patients in each group with and without MS. Totally they were 52 (60.5%) male and 34 (39.5%) female. The mean age of the MS group was significantly higher than non-MS group. There wasn't significant difference between mean serum creatinine and GFR between two groups ($P > 0.05$). The MS patients had higher weight and body mass index (BMI) [$P < 0.05$]. Prevalence of BMI > 25 kg/m^2 in MS group was (25) 58.8% vs. non-MS group that only (10) 23.3% had this condition ($P < 0.05$). There wasn't significant difference in serum FGF21 level between MS and non-MS patients ($P > 0.05$). Its serum level was also compared with each component of metabolic syndrome. There wasn't significant relation among them ($P > 0.05$).
Conclusions. Although elevated serum FGF21 level was found in subjects with insulin resistant states, present study revealed serum FGF21 level were not significantly elevated in renal transplant recipients with MS group compared with non-MS group.

P205

Serum Levels of IL-8 in Children with Acute Pyelonephritis

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Introductions. Urinary tract infection (UTI) is a common clinical disorder in younger infants and children and may result in permanent renal damage. The inflammatory cytokines IL-8 play an important role in response to bacterial infection. IL-8 acts as a potent neutrophils chemoattractant responsible for the migration of neutrophils into the infected renal tissue to protect against invading pathogens. The aim of this study was to assess the role of IL-8 on acute-phase pyelonephritis and later renal scarring in children.
Methods. This study was conducted to determine the diagnostic value of serum IL-8 levels in children with acute pyelonephritis confirmed by (99m) Tc-dimercaptosuccinic acid (DMSA) scan.
Results. A total of 72 children with mean aged 5.16 ± 3.16 years with a diagnosis of first-time UTI were included. 80.6% of them were girl and19.4% were boy. The following inflammatory markers were assessed: WBC, C-reactive protein (CRP), ESR, and serum and IL-8. The patients were divided into the acute pyelonephritis group (n=49) and the lower UTI group (n=26) according to the results of DMSA scan. WBC and CRP, ESR levels were significantly high in children with acute pyelonephritis than in those with lower UTI (all $P < 0.05$). Significantly, higher initial serum IL-8 levels were found in children with acute pyelonephritis than in those with lower UTI but was not statistically significant. In our study with cute of point 224.1 unit for serum IL8, sensitivity was 82% and specificity was 35%. Also negative and positive predictive value were 53% and 69% respectively.
Conclusions. Despite differences in the levels of serum IL-8 level between the two groups of patients, but this differences was not significant. Due to lack of an acceptable sensitivity and specificity of the test, it seem that serum IL-8 levels, are not useful diagnostic tools for early recognition of acute pyelonephritis in febrile children.

P206

Idiopathic Hypercalciuria in Children with Vesicoureteral Reflux

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Introductions. Vesicoureteral reflux can cause urinary tract infection and renal insufficiency. Now one of way for diagnosis is voiding cystogram (VCUG) that is an invasive method. Our aim was to determine association of idiopathic hypercalciuria in children with vesicoureteral reflux (VUR).
Methods. The study group consisted of 82 children with VUR and recurrent UTI, and 90 normal healthy children as control groups. Children with kidney stone, another urinary tract abnormalities, and history of drug using were excluded. Idiopathic hypercalciuria was defined as urine calcium to creatinine ratio more than 0.8 (mg/mg) in infants younger than 1 year old, and more than 0.2 (mg/mg) in older children (without any detectable causes for hypercalciuria).
Results. In this cross section study with 172 children that were placed in two groups and were matched based on sex, weigh. The study group (children with VUR) consisted of 42 (51.2%) girls and 40 (48.7%) boys, with the mean age of 3.18 ± 2.17 years old that 31 (37.8%) subjects had hypercalciuria. The control group composed of 53 (58.8%) girls and 37(41.1%) boys, with the mean age of 3.8 ± 2.11 years old. In this group, 21 subjects (23.3%) with hypercalciuria were detected ($P > 0.05$). Mean of calcium / creatinin ratio were 0.438 ± 2.19 in children with VUR and 0.37 ± 0.39 in normal healthy control ($P > 0.05$).
Conclusions. Although comparison between such results based on frequency of hypercalciuria was statistically significant but the mean of hypercalciuria was same between both groups. Despite reports of different studies about accompanying of hypercalciuria with recurrent UTI with or without anatomical abnormalities, according to the present study, idiopathic hypercalciuria may be a major contributing factor to recurrent UTI in children with VUR.

P207

Cross-Fused Renal Ectopia Associated With Vesicoureteral Reflux, Report of One Case

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Introductions. Crossed renal ectopia is one of the rarest urinary system anomalies with a male predominance of 3:2. Most cases are asymptomatic and are diagnosed incidentally.
Case Presentations. A 6-year boy admitted in hospital with colicky abdominal pain and nausea. Abdominal examination revealed tenderness in right lower quadrant. Urine analysis and culture were normal. Kidney ultrasonography showed right kidney in pelvis cavity with no kidney tissue in left side. TC 99-DMSA scan demonstrated no radiotracer accumulation in the normal renal area. Radiotracer accumulation was seen in the pelvis area with a deviation to the left. Voiding cystoureterogram revealed right sided grade II vesicoureteral reflux.
Conclusions. Our case presents cross fused renal ectopia with no evidence of urinary obstruction or nephrolithiasis despite evidence of severe kidneys fusion in TC99 DMSA scan.

P208

Successful Medical Treatment of Emphysematous Pyelonephritis in a Transplanted Kidney Recipient

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Introductions. Emphysematous pyelonephritis (EP) is a kind of urinary tract infections (UTI) that affects both native and transplanted kidneys. It usually requires nephrectomy in addition to antibiotic therapy for treatment.
Case Presentations. Our patient was a sixty six-year old man with a transplanted kidney since seven years ago. He presented with low grade fever, dysuria, and malaise. His urianalysis (U/A), showed pyuria and bacteriuria. His urine culture (U/C) showed E.coli with colony count more than 105 /mL. In Computed Tomography (CT) scanning of this patient, there was gas density in his pyelocaliceal system in his transplanted kidney.
Results. He treated successfully with meropenem without any surgical intervention. We followed him for about two years and his UTI did not recur in that period. He died two years after his EP because of a cardiac disease.
Conclusions. EP is a relatively rare presentation of UTI that usually requires both antibiotic therapy and nephrectomy for complete treatment, however we present an old man with EP in his transplanted kidney who cures only with antibiotic therapy. We suggest physicians to consider antibiotic therapy alone in the management of EP in transplanted kidney recipients if the patient responds to antiobiotic therapy dramatically.

P209

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 post-transplantation 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.

P210

Modeling and Designing a Computerized Transplant Information System for Clinical Management of Kidney Transplant Patients in the Urmia Kidney Transplant Center

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Introductions. Transplant patients undergo a series of expensive, long-term and complex care. What a typical transplant program often faces is the fragmentation of information required to monitor medications, laboratory results, and screenings for common complications. Health information technology (HIT) has been recognized as a highly valuable tool enabling current healthcare systems to care for such complex patients effectively. Although, the Iranian healthcare system has launched a number of large HIT projects mainly for management and financial purposes, it lags behind using such systems for clinical purposes. In this paper, we present the initial results of our large ongoing project at the Urmia kidney transplant center aiming at designing and developing a computerized transplant clinical information system.

Methods. We conducted a 'requirement analysis study' in the clinical workflows of our kidney transplant inpatient and outpatient units in the Imam Khomeini hospital in Urmia. This qualitative study was conducted using 20 hours of nonparticipating observations, 17 semi-structured interviews with the key informant care providers, and analysis of all relevant paper-based documents as well as the electronic information systems currently in use for clinical and research purposes. The data was analyzed inductively to depict the current and future processes and workflows.

Results. We extracted problem statements, requirement statements, business vocabulary, dataflow and workflows of the current business processes. Bottlenecks of the existing workflow processes were recognized and in order to improve the existing business processes, workflows of the current system were redesigned. Moreover, to capture the part of the data that has not already been captured, new data entry forms were developed. The scenario of redesigned and improved business operations were developed and documented to cover all operation of the current as well as the new system. Logic and data models of the new system were also developed.

Conclusions. This requirement analysis provides the basic information necessary for modeling of clinical workflow in the underlying models of a computerized transplant information system. On the bases of this study, in the next steps, we will develop, implement and evaluate the operation of the new computerized system and its impact on our transplant center's clinical workflow and patient care outcomes.

P211

No Circannual Rhythm in Plasma Vitamin D Level of Kidney Transplant Recipients in Mashhad

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Introductions. Vitamin D deficiency is a worldwide health problem. Bone turnover is controlled by

changes in biochemical markers like vitamin D and skeletal systems homeostasis is affected by vitamin D circannual rhythm. The aim of this study was to determine the frequency of vitamin D deficiency and to assess the circannual rhythm of plasma vitamin D level among kidney transplant recipients.

Methods. We studied kidney transplant recipients presenting to Montaserieh and Imam Reza hospitals nephrology clinics in winter 2014. Their blood samples were tested for 25-hydroxy vitamin D, parathyroid hormone, creatinine, phosphate, and calcium levels at the entrance and in summer 2014. Glomerular filtration rate (GFR) was calculated according to modification of diet in renal disease (MDRD) formula.

Results. We studied 96 (45 males) kidney transplant recipients. Mean age was 41 years. Mean transplant age was 6 years and 1 month. Serum 25-hydroxy vitamin D level was 15.0 ± 18.0 ng/mL and 14.7 ± 18.3 ng/mL in winter and summer; respectively ($P > 0.05$). Parathyroid hormone was inversely correlated to vitamin D level in both seasons ($P > 0.05$, correlation coefficient = 0.43). There was no relation between vitamin D and the other variables.

Conclusions. Our study shows that vitamin D deficiency is prevalent among kidney transplant recipients both in winter and summer. Also circannual rhythm of vitamin D in this group has been flattened and vitamin D level does not rise from winter to summer. It is recommended to check on kidney transplant recipients' vitamin D status routinely and start them on supplements if needed.

P212

Splenic Abscess Due to Candidia After Kidney Transplantation, a Case Report

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Introductions. Splenic abscess is an uncommon disease with Incidence rate of 0.1-0.7% in autopsy series. It has no specific clinical picture due to high mortality rate of lesion, it needs early detection and treatment. Although the most common causes of splenic abscess are bacterial pathogens but fungal spelenic abscess has been reported in organ transplanted patients receiving immunosuppressive drugs with an increasing incidence rate from 0.8% to 25.8%. The most frequent pathogens are candida, aspergillus, and cryptococcus. The diagnosis has become much more common in recent years as the population at risk has increased in size and more sensitive imaging techniques have been applied. A histologic diagnosis is often necessary because blood and tissue cultures may be falsely negative, particularly with candidal infections. The treatment is usually splenectomy, anti fungal therapy with close radiologic follow-up may be sufficient in some cases. Without prompt treatment, the infection is often fatal.

Case Presentations. A 59 years old woman presented to the hospital with fever, generalized weakness, and decreased appetite from 1 week ago. She was known case of end-stage renal disease due to autosomal dominant polycystic kidney disease who has underwent renal transplantation from a living unrelated donor 6 months ago in another center. Her medications including prednisolone, cyclosporine, and mychophenolate mofetile (MMF). She had a history of raised serum creatinine and candidal pyelonephritis in her allograft kidney, 1 month after transplantation that had been confirmed by kidney biopsy and was treated with caspofungin and her immunosuppressive drugs was discontinued. At that time, she was discharged from hospital with good general condition and normal kidney function while she was receiving voriconazole and low dose corticosteroid. After two months, MMF 250 mg two times per day was added to her drugs. Her serum creatinin was between 1.1 and 1.4 mg/dL. She was good until 1 week before her admission to our hospital. On physical examination, she was febrile with a pulse rate of 100 beat/min and blood pressure of 110/70 mmHg. General physical examination did not reveal any abnormality. Her laboratory data revealed increased leukocyte count with majority of neutrophils, blood urea nitrogen: 92 mg/dL, serum creatinine: 7 mg/dL, hemoglobin: 9.6 g/dL. Abdominopelvic sonography showed 50×48×35 mm^3 hetrogenous splenic mass. Antifungal therapy was begun and patient underwent splenectomy on third day of her admission. Spleen biopsy

showed abscess formation, including numerous fungal element suggestive for candida infection. Unfortunately, She died after splenectomy because of fungal septicemia.

Results. Pyogenic splenic abscess particularly fungal type is a rare condition with a tendency to occur in organ transplanted patients who are immunosuppressed. As the symptoms of systemic fungal infections are nonspecific, diagnosis requires a high index of suspicion. Different organs may be affected by fungal infections. Among them splenic involvement in the form of abscess or micro abscess has the least prevalence. In an autopsy study of 39 patients with disseminated fungal infection, spleen involvement with low prevalence rate 19% was found. Some articles pointed to an autopsy incidence of 0.1 to 0.7% for splenic abscess. Until now, 600 cases of abscess of the spleen are reported in world's literature. First case of candidal splenic abscess in a renal transplant recipient was reported by Nemek DK that was treated successfully by splenectomy and amphotericin B. Despite a lengthy illness, the patient recovered with preservation of renal function. Considering the rarity of this entity and high rate of mortality that reached by 47% based on some reportes, we reported this case to share our experience in diagnosis and treatment of the diseases with other health centers to find a way for successful management of the patients. On the other hand, as the frequency of invasive fungal infections are increasing due to improving the survival of immunocompromised patients, the diagnostic and treatment approaches require more attention. Typical clinical manifestations are fever and left upper quadrant pain with or without splenomegaly. However, some patients lack these classic features. Splenic abscess may be accompanied by a left-sided pleural effusion or by splenic infarction if it was due to septic emboli. There is no specific lab test for the diagnosis. Blood cultures usually are negative and histopathologic demonstration of candida organisms in tissue specimens is necessary for a definitive diagnosis. Our patient was an immunosuppressed patient who had been experienced one episode of fungal pyelonephritis 5 months ago and was recovered with preservation of renal function at that time. Despite of discontinuation and then minimization of her immunosuppressive drugs, fungal splenic abscess was occurred and she died just one day after splenectomy. Splenectomy has long been considered as the standard treatment of bacterial and fungal splenic abscess. Recent reports suggest that patients with fungal abscesses can be treated medically using antifungal agents and needle aspiration without splenectomy. There are some encouraging reports of treatment with amphotericin B therapy alone or fluconazole in the case of resistance to amphotericin B,as an efficacious and less toxic alternative to amphotericin B. Also there are some reports of treatment with administration of caspofungin and corticosteroid therapy as an adjuvant to antifungal treatment. There are also some reports of successful treatment by inserting a catheter into the portal vein under ultrasonic-guidance and administration of amphotericin B via it. Surgical options include percutaneous aspiration, percutaneous catheter drainage, open drainage, and splenectomy. Percutaneous computed tomography-guided drainage should be limited to patients with unilocular abscess cavities with a discrete wall and thin fluid collections without septations. As fungal abscesses usually are multiple and the patients have usually disseminated fungal infections due to their immunodeficiency state, they can't met the criteria for CT-guided drainage. Splenic abscess is usually managed by a combination of antibiotic therapy and splenectomy. Although CT-guided percutaneous aspiration is occasionally successful, but it seems that surgery still remains the standard treatment.

Conclusions. Thinking about unusual, opportunistic infection and abnormal location of involvement, can reduce and prevent this unpleasant complication. So early diagnosis and intervention (medical and surgical) can decrease mortality. Because of the rarity of this diseasis, randomized clinical trials to assess the treatment modalities has been impossible, report of this case and same ones help the clinicians to emerge the data in the management of their patients by reviewing the literature.

P213

Association of Serum Fetuin-A Levels with Allograft Outcome in Renal Transplant Recipients

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Introductions. To determine serum fetuin-A pattern after renal transplantation and its association with graft outcome.
Methods. In 41 renal transplant recipients, serum pretransplant fetuin-A levels and serum fetuin-A concentrations on days 7 and 30 after transplantation were measured using the enzyme-linked immunosorbent assay (ELISA) method. Also, the association between serum fetuin-A levels with clinical and laboratory parameters was evaluated.
Results. A significant decrease in serum fetuin-A levels was noted in the first week after transplantation ($P < 0.001$). Subsequently, it started to increase and surpass pretransplant values during the first month ($P < 0.001$). Pre-transplant fetuin-A levels did not differ among patients with different diethylenetriamine pentaacetic acid (DTPA) results. In addition, serum fetuin-A levels did not significantly correlate with metabolic parameters.
Conclusions. In this prospective study there was no increase in serum fetuin-A levels during the first month and pre-transplant fetuin-A levels are not predictive for allograft outcome in renal transplant recipients.

P214

Correlation of Serum Uric Acid Level and Calcineurine Inhibitors Level in Kidney Transplant Recipients

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Introductions. Calcineurine inhibitors are one of the immunosuppressants which are widely used in the field of solid organ transplantation. They have their own adverse effects like any other drug. Hyperuricemia is one of the well-known side effects of cyclosporine but it is less studied for tacrolimus.
Methods. In a cross-sectional study we considered renal transplant patients who referred to Shiraz Motahari clinic for follow-up visits. We included patients who had serum creatinine less than 2 mg/dL and stable allograft function within the month prior to the visit. Those who were taking diuretics or anti-uric acid agents (such as allopurinol) or experienced a volume depletion state such as diarrhea and vomiting recently were excluded. Any recent (within one month) changes in calcineurine inhibitors dosage were also considered as an exclusion criteria. The patients who were transplanted within the recent three months were also excluded.
Results. A total of 102 renal transplant recipients with an average age of 40.2 ± 10 years were included. Of them, 58 were male (56%) and 80 patients (78%) received kidney from deceased donors (others from living donors). Fifty six patients were on cyclosporine and 46 were on tacrolimus. Serum uric acid level in cyclosporine-based regimen (5.4 ± 1.3 mg/dL) was higher than tacrolimus-based regimen (4.8 ± 1.4 mg/dL, $P < 0.05$). There was not significant correlation between serum uric acid with cyclosporine level ($r = -0.205$, $P > 0.05$) and tacrolimus level ($r = -0.076$, $P > 0.05$). It was no significant correlation between cyclosporine and tacrolimus level with GFR, serum creatinine, blood urea nitrogen, and potassium. Serum creatinine was 1.3 ± 0.2 mg/dL in cyclosporine group and 1.2 ± 0.3 mg/dL in tacrolimus group which were not significantly different.
Conclusions. In this study we found no significant correlation between serum uric acid with cyclosporine and tacrolimus level. Serum uric acid level in cyclosporine was higher than tacrolimus.

P215

Facial Ulcers Induced by Cytomegalovirus in a Renal Transplant Recipient, a Rare Case Report

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Introductions. Cytomegalovirus infection (CMV) is a well-known consequence of immunosuppression and one of the expected pathogens in the recipients of solid organs such as renal transplant recipients. Infection by CMV in immunocompromised settings can be life-threatening since many organs are involved and affected. Skin involvement has been rarely reported.
Methods. In this report, we presented a highly immunosuppressed renal transplant recipient with CMV infection manifested as ulcerative skin lesions on the face along with allograft dysfunction diagnosed by skin biopsy and renal allograft in addition to the presence of antigenemia which resolved following antiviral treatment.
Case Presentations. A 67-year old man presented with epigastric pain, loss of appetite, weight loss of about 7 kg and two ulcerative lesions on his face (one on the lower lip and the other on the left nasolabial fold) 37 days after kidney transplantation. He had received a transplant from a deceased donor. Alemtuzumab and methylprednisolone were used as induction treatments. Skin biopsy of the lesions revealed some inrtranuclear inclusions with clear halo within enlarged endothelial cells of the dermal blood vessels and histiocytes in the inflammatory bed deep to the ulcer. CMV PP 65 antigenemia assay showed 100 affected cells among 200,000 polymorphonuclear leukocytes. Intravenous ganciclovir was commenced. CMV PP65 assay was negative after three weeks of treatment and allograft function improved. The patient was discharged from the hospital after four weeks in a good condition. The ulcers on his face were completely improved within one month of discharge.
Conclusions. This case report highlights the importance of early biopsy in renal transplant recipients with skin lesions which is essential for appropriate treatment. CMV should be considered as a possible etiology in these patients particularly those who are highly immunosuppressed.

Second Day

P216

An Investigation Into the Factors Effective in the Consent of Families with Brain Dead Patients Candidate for Organ Donation in Isfahan, Iran (2012-13)

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Introductions. Studies show that with regard to social, cultural, and institutional contexts; several factors affect family decision-making on organ donation. This study aimed to investigate the effective factors in organ decision by family members with brain dead patients.
Methods. The study method was descriptive-comparative in which a researcher-made questionnaire was used in order to collect data. The reliability of the questionnaire was obtained as 0.81 using Cronbachs alpha. The study sample consisted of all members of families with brain dead patients in Isfahan, Iran (2012-13). The collected data were interred into SPSS 20 software and the level of significance was considered as less than 0.05.
Results. The obtained results indicated that factors such as age, marital status, level of education, and cause of brain death did not have any effect on their families consent ($P > 0.05$), while factors such as gender, duration of hospitalization, having organ donation card, personal view of the brain dead patient and the number of patient's children had a significant relationship with the consent on organ donation ($P < 0.05$). Also the level of awareness and knowledge of families along with their attitude can be effective in their decision about organ donation. In addition, the care and treatment team were effective in family decisions regarding organ donation.
Conclusions. In general, the necessary culturalization and increasing the population awareness and their knowledge can be a positive step in this regard and may cause an easy and rapid acceptance of organ donation by the involved families.

P217

Pulmonary Aspergillosis After Kidney Transplantation, a Case Report

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Introductions. Pulmonary aspergillosis is the most common cause of systemic fungal disease in immunosuppressed kidney transplant patients with an incidence range from 0.4% to 2.4% with a high mortality of 56% to 100%.
Case Pesentation: The patient was a 64-year old man who was on hemodialysis from 18 months ago followed by ESRD without known cause. He had a kidney transplant from deceased donor 4 months ago. The patient was admitted due to severe lethargy and nonproductive cough without fever. Drug history (HX) included mycophenolate mofetil, prednisolone, and cotrimaxzole. Lab tests showed leukopenia (WBC = 2.5 x 10^3 µ/L, Hb = 10.2 gr/dL, Plt = 163 x 10^3 µ/L), creatinine = 1.4 mg/dL which was not increased recently. Chest CT scan showed multiple cavities in the middle lobe of right lung. Amphotericin B (1 mg/kg/d) was started with presumptive diagnosis of fungal infection. CMV antigen was negative and serum galatomannan was positive. Bronchoalveolar lavage (BAL) smear and culture was negative for mycobacterium tuberculosis but positive for aspergillosis. The patient's general condition improved after therapy with amphotericin B. The patient was discharged with oral voriconazole 200 mg BID.
Results. Leukopenia after kidney transplant, early onset infection during the first 3 months after transplantation, and > 1 year pretransplant duration of dialysis are risk factors for pulmonary aspergillosis. Disseminated infection, leukopenia, and positive serum glactomannan are associated with an increased risk of death. The specificity of a positive BAL fluid for fungal infection is about 97% but the sensitivity is 30-50%. Voriconazole is a potent and well tolerated antifungal drug in the treatment of invasive pulmonary aspergillosis in kidney transplant recipients. Initial therapy with voriconazole leads to a better response and improves survival.
Conclusions. Pulmonary aspergillosis should be considered in kidney transplant recipients with cavitation in CXR. Early antifungal treatment can be life–saving.

P218

Sleep Apnea Syndrome and Restless Leg Syndrome in Kidney Transplant Recipients

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Introductions. This study was aimed to evaluate the prevalence of obstructive sleep apnea (OSA) and Restless legs syndrome (RSL) in patients with end stage renal disease (ESRD) after kidney transplantation.
Methods. Two hundred kidney transplant recipients were enrolled in this cross-sectional study. Age, gender, etiology of ESRD, history of previous kidney transplantation, serum creatinine, and the presence or absence of OSA and RLS were collected. Symptoms of RLS were identified by using the RLS questionnaire completed by patients and the Berlin questionnaire and polysomnography was used for diagnosing OSA.
Results. The mean age of the studied patients was 45.86 ± 10.24 years. The prevalence of OAS was 26% (52 of 200 studied patients) and prevalence of RLS was 51.5% (103 of 200 studied patients). More of patients with high risk OAS were male and significantly older than patients with low risk OAS ($P < 0.05$). The prevalence of the RLS was higher in patients with high risk OSA with higher level of creatinine compared with those with low risk of OSA ($P < 0.001$). Level of creatinine in positive RLS was significantly higher than negative RLS ($P < 0.001$). OAS was observed in almost 42% of patients with positive RLS compared with almost 9% in patients with negative RLS ($P < 0.001$).
Conclusions. In summary, our results indicate that the prevalence of OSA and RLS in kidney transplant recipients was higher than general population. Also there was a significant association between OSA and RLS in these patients.

P219

Tacrolimus Induced Posterior Reversible Leukoencephalopathy Syndrome

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Introductions. Calcineurin inhibitors (CNIs) are considered the cornerstone of immunosuppressant regimen in the majority of solid organ transplant recipients, however CNIs have significant toxicity profiles including pronounced neurotoxicities. Posterior reversible leukoencephalopathy syndrome (PRES) is a rare acute neurologic dysfunction accompanied by imaging abnormalities that could result from treatment with CNIs. While mainly reversible without residual deficits, when expeditiously recognized, it could be associated with significant morbidity and mortality if there is a delay in diagnosis. Heightened awareness of this potentially serious CNIs adverse reaction is warranted.

Case Presentations. A 14-year old boy with renal failure secondary to chronic focal and segmental glomerulosclerosis received a renal transplantation from a deceased donor. His immunosuppressive regimen included antibody induction, mycophenolate mofetil, prednisolone, and tacrolimus. Five days after transplantation, he developed headache and subsequent convulsions. He had no prior history of seizures. On physical examination, his vital signs were normal except blood pressure 140/90 mmHg. There were no sensory or motor deficits. Laboratory studies and lumbar puncture were unremarkable. An MRI of the brain revealed hyperintensity in the subcortical and cortical regions of the bilateral parieto-occipital lobes on T2- weighted images which was indicative of PRES. Tacrolimus was changed to cyclosporine.

Results. The patient did not show neurologic symptoms and was discharged on the tenth hospital day with low dose anti-epileptics. The patient was neurologically asymptomatic after 1 month of discharge.

Conclusions. To our knowledge this is the first case of tacrolimus associated PRES reported in Iran. While PRES is an uncommon CNIs complication without correlation to drug blood level, a delay in diagnosis could lead to permanent neurologic deficits. Immediate diagnostic work-up, especially MRI neuroimaging, is required in any transplanted patient presenting with neurological symptoms. Therapy is nonspecific, involving the replacement of the toxic immunosuppressive agent.

P220

Genetic Evaluation of Hereditary Nephrotic Syndrome in Iranian Families

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Introductions. Nephrotic syndrome (NS) is a heterogeneous clinical condition with a high degree of morbidity and mortality, caused by failure of the glomerular filtration barrier, resulting in massive proteinuria. In steroid-resistant forms it commonly causes by rare highly penetrant mutations in number of genes encoding proteins essential for podocyte structure and/or function. Therefore, genetic analysis is changing the current diagnostic, prognostic, and therapeutic decisions in NS which are largely based upon clinical or histological patterns to more precise definition.

Methods. High-throughput mutation analysis was performed in a cohort of Iranian families with hereditary steroid-resistant nephrotic syndrome (SRNS) and/or focal segmental glomerulosclerosis (FSGS) by simultaneously sequencing 26 genes associated with SRNS/FSGS, using massive parallel sequencing of patient's extracted DNA or the patient's parents if DNA from deceased patients were not available. The identified variants were confirmed by Sanger sequencing and subsequently familial segregation analysis was carried out.

Results. In one family, we identified a heterozygous missense mutation in exon 3 of NPHS2 encoding podocin (c.413G > A; p.Arg138Gln) in parents of the patients who died at early childhood after

they reached end-stage renal disease (ESRD). This mutation is the most frequent mutation found in NPHS2 and in the homozygous state it is associated with a severe SRNS starting early in life and rapidly progressing to ESRD around 5 years of age. In another family, we also identified a previously reported homozygous truncating mutation in exon 3 of NPHS2 (c.467dup; p.Leu156Phefs*11) which caused ESRD and death before the age of 5 in affected children in the family.

Conclusions. Molecular genetic analysis not only plays an important role in aetiological explanation, identifying pathogenic mutations, genetic counselling and prenatal diagnosis of NS, it also provides prognostic information based on genotype-phenotype correlations, allows guiding therapy (inefficiency of immunosuppressive therapy and absence of recurrence of the disease after kidney transplantation).

P221

25 Hydroxy vitamin D Deficiency in Kidney Transplant recipients

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Introductions. Bone loss is a common problem in chronic kidney disease (CKD) patients, and it is exaggerated in Kidney transplant recipients who osteopenia due to Immunosuppressive drugs are added to basic renal osteodystrophy. In addition, vitamin D deficiency also aggravated this process. Based on previous studies, Vitamin D Deficiency is prevalent in this group of patients in different population. So we tried to find the prevalence of vitamin D deficiency in our patients.

Methods. This multicenter cross sectional study was done on 118 renal transplant recipients to detect vitamin D deficiency in warm seasons of 2014. All blood samples were analyzed for 25OH vitamin D, creatinine, calcium, phosphor, PTH, and alkaline phosphatase (ALP) simultaneously. Patients were classified based on their serum 25OHD levels: normal (> 30 ng/mL), insufficiency (16–30 ng/mL), and deficiency (< 16 ng/mL). Patients with past history of malabsorption syndrome, alcoholism, and taking vitamin D supplementations in the last 2 weeks were excluded.

Results. Insufficient or deficient 25OHD levels were present in 88/118 patients (74.5%). The mean age of participants was 37.9 ± 12.89 years and 54.23% of them were male. Mean serum 25OH vitamin D level was 21.93 ± 15.89 ng/mL. There were not significant correlation among serum vitamin D level and GFR, calcium, phosphor, ALP, and demographic data ($P > 0.05$). However we found patients with vitamin D deficiency had significantly higher iPTH level ($P < 0.05$).

Conclusions. Vitamin D deficiency is common in renal transplant recipients in our area. As vitamin D deficiency is accepted as a risk factor of osteoporosis, so vitamin D supplement can help to prevent bone disease after transplantation.

P222

Prevalence of BK Viremia in ESRD Patients Before Kidney Transplantation

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Introductions. BK virus (BKV) is a common human polyomavirus. Polyomavirus nephropathy (PVN) that mainly caused by BK virus is an important cause of graft loss after renal transplantation. About 80% of the general populations are infected with this virus with little clinical significance. Immunocompromised conditions such as uremia and combinations of immunosuppressive therapy especially after organ transplantation are considered the main risk factor for BKV reactivation. In this study we assessed 94 ESRD patients for BK viremia at pre-transplantation period.

Methods. In this study we evaluated the prevalence of BKV infection and viral replication by qualitative polymerase chain reaction in 94 ESRD patients before kidney transplantation.

Results. We selected 94 patients 17-71 years old (59 males, 35 females), 75 (80%) were on hemodialysis (HD), 19 (20%) were not on dialysis. BKVPCR was positive in 23 (22%) pts and negative in

71 (78%) pts. In BKV positive group male and female distribution were 10 (44%) and 13 (56%), respectively. 21 (91%) had history of hemodialysis and 2 (9%) no history of hemodialysis. 11 (48%) had history of blood transfusion and 12 (56%) no history of blood transfusion. In BKVPCR negative group male and female distribution were 49 (69%) and 22 (31%), respectively. 54 (76%) had history of hemodialysis and 17 (24%) no history of dialysis. 24 (34%) had history of blood transfusion and 47 (66%) had no history of blood transfusion.
Conclusions. BKV replication is common in uremic patients and history of hemodialysis and blood transfusion may be important as a risk factor for BKV replication.

P223

Risk Factors for Chronic Kidney Disease After Heart Transplantation

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Introductions. Patients with heart transplantation are at risk of acute kidney injury and chronic kidney disease. The aim of this study was to determine risk factors for chronic kidney disease among patients undergoing heart transplantation surgery in Dr Shariati hospital from 1382 to 1392, all of whom are required to take immunosuppressive medications for the rest of their lives.
Methods. This study was retrospective. The study population involved all patients undergoing heart transplantation surgery in Dr Shariati hospital. Data was collected using a researcher designed questionnaire.
Results. The findings of this study showed high cyclosporine levels (172 ng/mL in second year of transplantation) to be the main risk factor for the development of chronic kidney disease.
Conclusions. It is recommended that heart transplant surgeons periodically refer their transplanted patients to nephrologists in order to evaluate issues related to immunosuppression, since nephrologists are more familiar with those issues.

P224

The First Report of NPHP1 Deletion Causing Adult form of Nephronophthisis in Iran

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Introductions. Nephronophthisis (NPHP) is an autosomal recessive cystic disease of the kidney with main characteristic features of polyuria/polydipsia, mild or absent proteinuria, interstitial fibrosis, and tubular cysts. NPHP is responsible for 5–10% of inheritable end-stage renal disease (ESRD) cases. We investigated the clinical features and genetic cause of NPHP in a Persian family with three siblings affected by tubulointerstitial nephropathy reaching ESRD in adulthood.
Methods. Uromodulin (UMOD), known to be involved in adult medullary cystic kidney disease, and nephronophthisis 1 (NPHP1) were investigated in the genomic DNA of the probands using DNA sequencing, multiplex ligation-dependent probe amplification (MLPA) analysis and molecular karyotyping.
Results. No mutation was detected in UMOD. Copy number variation analysis of the NPHP1 gene using the commercially available MLPA kit identified a recurrent large homozygous deletion encompassing all NPHP1 exons. The parents were heterozygous for this deletion. Whole genome array-CGH analysis confirmed a homozygous deletion on chromosome 2q13, NPHP1 site, and revealed that the size of the copy number loss was approximately 102 Kbp.
Conclusions. This is the first report of determination of an NPHP1 deletion size using routine diagnostic methods. The results of this study expand the knowledge about the genotype–phenotype correlations in NPHP1, and have implications for genetic counseling and family planning advice for other affected families. This is the first molecular analysis of NPHP1 in an Iranian kindred.

P225

Esophageal Perforation in a Patient with Kidney Transplantation and a History of Swallowing Difficulty, A Case Report

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Introductions. Esophageal perforation is the rupture of the esophageal wall. Iatrogenic causes account for approximately 56% of esophageal perforations, usually due to medical instrumentation such as an endoscopy or paraesophageal surgery. Perforation of the esophagus remains a diagnostic and therapeutic challenge and the incidence of esophageal perforations has increased as the use of endoscopic procedures has become more frequent. This complication is difficult to diagnose and leads to high mortality and morbidity rates.
Case Presentations. Our patient in this case presentation is a 54-year old woman who was affected by esophageal perforation after kidney transplantation. With repeated medical history evaluations, it was revealed that she had difficulty swallowing. She had received a gastrointestinal consultation before the transplantation surgery. The aim of reporting this event is to remember that perforation may occur after any organ transplantation, including kidney transplantation, especially within the initial two weeks, when high doses of corticosteroids with mycophenolate mophetil are used.
Conclusions. It seems that taking many prednisolone pills with mycophenolate mophetil, when there is a delay in the passage of drugs, leads to irritation and ulceration, which may be the main causing factor for esophageal perforation. This matter must be considered in patients who have had swallowing difficulty prior to surgery and the necessary work-up and preventive strategies such as using intravenous steroids for the first 2-3 weeks and divided doses of pills, must be carried out.

P226

Sitting Position for Kidney Biopsy, More Comfortable for Patients

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Introductions. Kidney biopsy is done as a procedure for diagnosis of type of glumerulopathys and cause of kidney failure and some other indications. Usual position for patient is prone position with a pillow under his abdomen. In some patients this position causes dyspnea, sweating, and discomfort. Some of patients cannot have this position because of heart and lung disease.
Methods. In this study patients divided randomly in two groups, sitting or prone position.
Results. With prone position 36% of patients had high level of stress but in sitting position group, 4%. Sweating 48% and 16% in prone and sitting position groups, respectively. Mean of glomeruls count was 18.5 and 17.5 in prone position and sitting position, respectively.
Conclusions. Sitting position is equally effective in taking enough glomeruls and more comfortable for patients.

P227

Determine Influence Time of Urinary Catheter Removal in Incidence of Bacteriuria, Urinary Tract Infection, Size of Transplanted Kidney Until One Month After Transplant

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Introductions. Urinary tract infection (UTI) and asymptomatic bacteriuria are the most common infectious complication after renal transplantation. One of the reported factor for UTI in transplanted kidney recipients is prolonged postoperative bladder catheterization. We aim to determine influence of time of urinary catheter removal in incidence of bacteriuria and urinary tract infection and transplanted kidney size until one month after transplant.

Methods. In total, 109 patients (74 males, 35 females) with kidney transplantation from January 2011 to July 2014, in Babol Beheshti hospital were investigated in this prospective study . The patients were divided in two groups; in the first group urethral catheter was removed within 5 days after transplant and in the second group it was removed in more than 5 days. UTI was defined as the presence of more than 100000 colony forming units (CFU) of a pathogenic organism by mL of urine. The patients were followed up during the first month after the kidney transplantation. The living donors before nephrectomy and the receptors patient during the first month after transplant were evaluated by sonography. Renal volume was then calculated from the kidney's length, width, and anterior-posterior diameter using the formula L × W × AP × 0.523.

Results. Asymptomatic bacteriuria was diagnosed in 23 patients (21.1%). The asymptomatic bacteriuria incidence was 27% in first group and 13% in second group ($P > 0.05$), but in male gender in first group incidence of bacteriuria were statistically higher than second group ($P < 0.05$). In this study, the risk factor that was independently associated with UTI development was female gender ($P > 0.05$). Transplanted kidney volume changes correlated donor BMI and reception age, but decreased with donor age. The renal volume changes showed no correlation with duration of bladder catheterization after kidney transplant. Gram-negative bacterium was the most prevalent isolated microorganism with E.coli (15.6%) as the major organism.

Conclusions. In our study, time of removing urinary catheters did not have influence in incidence of asymptomatic bacteriuria. The study also shows that abnormalities of kidney size are not present in asymptomatic bacteriuria in transplanted kidney.

P228

Peritonitis in Children Being Treated with Continuous Ambulatory Peritoneal Dialysis

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Introductions. Continuous ambulatory peritoneal dialysis (CAPD) is an established treatment option for patients with end-stage renal decease (ESRD). This form of renal replacement therapy is used in most children with end-stage renal decease who is awaiting renal transplantation. CAPD is also preferred over hemodialysis for patients whose vascular access is difficult. However, certain complications such as peritonitis are more frequent with CAPD.

Methods. A six-year retrospective study was performed to determine incident of peritonitis in a pediatric CAPD population of 73 children.

Results. The mean age of patients was 57 ± 2 months, 58.9 % of them were boys and 41.1 % were girls. Kidney dysplasia with or without vesicoureteral reflux was most common causes of ESRD (34%). The incidence of peritonitis one episode every 30 patient-months. Microbiologic evaluation showed that 16.28% or the episodes were gram-positive microorganism, 27.91 % were gram negative infections and 13.95 % were fungal agents. 3.7 % of patients had negative cultures. Cloudy dialysate was the major presentation. Peritonitis was treated with intraperitoneal administration of vancomycine and ceftazidime when suspected and 29.4% of the episodes needed hospitalization. Expert for 2 patients who died of complications (fungal peritonitis) all episodes of peritonitis were cured; in 5 episodes it was necessary to remove catheter.

Conclusions. Most of peritonitis in CAPD patients' well responded to medical treatment and major organism were gram-positives.

P229

Diagnostic Value of Dialysate White Cell Count in Pediatric in Peritonitis Complicating Peritoneal Dialysis

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Introductions. Early prediction of peritonitis complicating peritoneal dialysis is the best way to manage peritonitis. The aim of the present study was to determine prognostic value of dialysate white cell count in pediatric in peritonitis complicating

peritoneal dialysis.
Methods. The records of children, younger than 15 years old between 2010 and 2013 referred to Imam Reza hospital because of peritonitis complicating peritoneal dialysis, were collected. We reviewed retrospectively 60 episodes of peritonitis. For each episode of peritonitis, we recorded the peritoneal dialysate white blood cell count on day 3 and smear and culture.
Results. In this study, treatment success occurred in 68.3% episodes. The remaining episodes (31.7%) with treatment failure, 15.8% episodes result in mortality, and 59.9% episodes required Tenckhoff catheter removal and 26.3% of episodes resulted both of them. The peritoneal dialysate white count on day three was significantly higher in the treatment failure group (defined as catheter loss or peritonitis-related death) than in the treatment success group and was significantly lower in the failure group than in the treatment success group ($P < 0.05$ was considered significant). On the basis of examination of the ROC curve, the dialysate white count on day 3 that optimized sensitivity and specificity for the prediction of peritonitis complicating peritoneal dialysis was approximately 1400 mm^3 (OR = 9.5, 95% Cl: 4.1-19.2). For a potential dialysate, white count: 1400 mm^3 on day 3 the sensitivity was 81.3% and the specificity was 72.2%. The cut point: 1400 mm^3 had 56.5% positive predictive value, and 91% negative predictive value.
Conclusions. This study showed the prognostic value of peritoneal dialysate white cell count on day 3 to predict outcomes of peritonitis complicating pd in pediatric.

P230

Role of Plasma Neutrophil Gelatinase-Associated Lipocalin (NGAL) as Emerging Biomarker of Acute Renal Failure Following Kidney Transplantation and Correlation with Plasma Creatinine

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Introductions. Graft function early after kidney transplantation is an important parameter in determining the outcome of operation. Urinary and plasma neutrophil gelatinase-associated lipocalin (NGAL), a member of the lipocalin protein family, has been advocated as a sensitive, early biomarker for predicting early renal graft after transplantation. The functions of NGAL are not clear, but it appears to be expressed in stress conditions and in tissues undergoing involution. It rapidly accumulates in the kidney tubules and urine after nephrotoxic and ischemic insults. This study aimed to examine the prognostic role of NGAL early after renal transplantation.
Methods. A total of 37 kidney recipients were enrolled from a teaching centre in Tabriz within a six-month period of time. Plasma NGAL was measured immediately before and at 6 and 12 hours post-transplantation. Changes of serum creatine were documented daily within the first week postoperation. Acute kidney injury/graft rejection during the first week after transplantation was the outcome variable.
Results. There were 22 males (59.5%) and 15 females (40.5%) with the mean age of 34.93 ± 14.97 years (range: 12-59) in the study group. Acute kidney injury/graft rejection developed in 12 patients (32.4%). The two groups with and without acute kidney injury/graft rejection were comparable in terms of age and sex. The mean post-transplantation plasma NGAL levels and serum creatinine at all time points were significantly higher in patients with acute kidney injury/graft rejection. The best prognostic role was found for plasma NGAL at 12 hours (sensitivity = 100%, specificity = 92%; cut-off value = 309 ng/mL), far better than the prognostic accuracy of corresponding serum creatinine (sensitivity = 66.7%, specificity = 61.9%).
Conclusions. Plasma NGAL, particularly 12 hours after transplantation, is a very sensitive and specific biomarker for predicting acute renal injury within one week post-transplantation.

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ABSTRACTS

Third Day

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O401

Vascular Complications Following Kidney Transplantation, Experience from 2100 Recipients (Code:330)

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Introductions. Vascular complications during kidney transplantation are the major cause of graft loss, but immediate surgical intervention is very important for salvage of the graft and recipient. The aim of this study is to show our experience of vascular interventions and their affects on the outcome of grafts in transplanted patients with suspected vascular events.
Methods. During 24 years (1990-2014), 2100 renal transplantation (1562 live and 438 deceased donors) was performed by one fixed team. We reviewed the recipients to find cases with vascular complications like artery or vein kinking or torsion, renal artery thrombosis (RAT), and renal vein thrombosis (RVT). Diagnosis of vascular event was suspected when urinary output suddenly stopped and confirmed by color doppler ultrasonography or immediate exploration. Kind of surgical interventions for saving grafts and their outcomes were assessed.
Results. A total of 28 (1.3%) vascular accidents have been occurred. Arterial kinking, arterial torsion, and venous torsion occurred in 9 (26%), 2 (0.5%), and 2(0.5%) patients; respectively. RAT and RVT occurred in 12 (34%) and 3 (1.5%), respectively. 8 of 9 arterial kinking occurred in cases that we used internal iliac artery. Mean time interval between anuria and surgery was 30 ± 10, 50 ± 10, and 65 ± 20 minutes for vascular kinking, RAT, and RVT; respectively. 11 out of 13 grafts with vascular kinking or torsion were saved by immediate surgical intervention but only 4 grafts of RAT group and 2 grafts of RVT group were saved by surgical intervention. In RAT cases we reopened the anastomosis and performed very small venotomy. Then we washed and perfused graft with heparinized ringer solution and finally revascularization was restored. Delayed graft function occurred in all cases of saved RAT and RVT but only in 5(4%) cases of kinking or torsion vascular cases.
Conclusions. Sudden cessation of urine after renal transplantation is a warning sign and immediate diagnosis of vascular event will help salvage graft with proper intervention.

O402

Investigation of Patient and Graft Survival and Influencing Factors Among Renal Transplant Recipients, in Imam Khomeini Hospital (RAH) Transplantation Center, Urmia City (2001-2011)

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Introductions. The irreversible end-stage renal failure in kidney function is impaired to the extent that it causes permanent dependence on alternative treatments is sick. It is known one of debilitating diseases with high mortality rate. Kidney transplantation in many cases can be considered one of the most effective treatment methods for end-stage renal failure. The aim of this study was to determine the patient and graft survival rate of renal transplantation in patients who have been transplanted in Urmia transplant research center, Urmia, Iran.
Methods. This study was a retrospective study. Patient and graft survival rate after kidney transplantation was determined in 991 patients being transplanted in Urmia transplant research center, Iran during a period of10 years (March 2001 to March 2011). Kaplan-Meier method was used to determine the survival rate, Log rank test was used to compare survival curves and Cox proportional hazard model was used for multivariate analysis.
Results. Mean follow-up period was 53.07 ± 34.6 months. Patient and graft survival rates at 1, 3, 5, 7, and 10 years after kidney transplantation were found to be 95%, 91%, 88.13%, 86.39%, and 80.3%; and 94%, 87.49%, 84%, 81%, and 75%; respectively. Using Cox proportional hazard model, age of recipient, creatinine level at discharge, and obesity showed significant relationships with patient

survival rate as well as age of recipient, creatinine level at discharge, warm ischmia time, related living donor, cytomegalovirus infection, UTI, and hemodialysis showed significant relationships with survival rate of renal allograft.
Conclusions. The 5 and 10 years patient survival rate of renal transplantation in this center is 88.13% and 80.3%, and graft survival rate 87.49% and 75% which in comparison with reports from large centers of transplantation it is satisfactory.

O403

Tacrolimus Dose Requirement in Iranian Kidney Transplant Recipients Within First Three Weeks After Transplantation

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Introductions. Tacrolimus is the main immunosuppressive agent in many kidney transplant protocols with initial recommended daily dose of 0.2 mg/kg of ideal body weight (IBW) in these patients; however, due to the high inter- and intra-patient variability in its pharmacokinetic characteristics, the required tacrolimus doses may differ between different patient populations. This study assessed the required tacrolimus doses to achieve desired whole blood concentration within first three weeks after kidney transplantation in Iranian patients.
Methods. This cross-sectional study was performed at kidney transplantation ward of Imam Khomeini hospital complex. In this center almost all patients receive thymoglobulin induction therapy and a calcineurin inhibitor, mainly tacrolimus plus mycophenolate, and prednisolone as maintenance immunosuppressive drugs with the target tacrolimus whole blood concentration of 8-12 ng/mL for the first month after transplantation.
Results. In this center mean administered daily dose of tacrolimus during first three weeks after transplantation was 0.085 ± 0.024 mg/kg of IBW that resulted in mean whole blood concentration of 10.34 ± 5.44 ng/mL. The required dose to reach desired whole blood level of 8 to 12 ng/mL was 0.08 ± 0.02 mg/kg. Compared with males, females needed 19% more daily doses of tacrolimus to reach similar whole blood levels. Tacrolimus dose adjusted blood levels (tacrolimus trough concentration (ng/mL) to tacrolimus daily dose (mg/kg)) were significantly correlated with daily diltiazem doses ($r = 0.239$, $P < 0.05$) and patients' age ($r = 0.242$, $P < 0.05$).
Conclusions. It seems that Iranian kidney transplant recipients need lower daily doses of tacrolimus to achieve desired whole blood concentrations. Compared with males, females need higher tacrolimus doses.

O404

Observational Study on Clinical Practices and Therapeutic Management of Mineral and Bone Disorders in Chronic Kidney Diseases (Code:488)

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Introductions. Abnormalities of Ca, P, and PTH seems to be among non classical risk factors of cardiovascular diseases in chronic kidney diseases (CKD). Since mineral and bone disorders are common in CKD patients, information of physician regard to management of these disorders is very important. So, the aim of this study was assessment of knowledge of physician about mineral and bone disorders according to international guidelines.
Methods. This multicenter observational study conducted 209 CKD patients stage 4, 5, and 5D from 13 centers of Iran. Sixteen nephrologists were

participated and their guidelines knowledge was assessed by a questionnaire. Patient characteristics and medical and drug history, dialysis type were recorded and routine biochemical laboratory test, serum bicarbonate, Cr, iPTH, and 25(OH) Vit D were assessed.

Results. All of physicians were familiar with international guidelines such as KDIGO and KDOQI. According to KDIGO, 47% stage 4 and 5 CKD patients and 63.3% stage 5D CKD patients had serum phosphorus in the target range and 50% of all patients had serum calcium level within target range. 8% of patients with stage 4, 0% of stage 5 and 10.5% of stage 5D had Ca, P, and iPTH in target range. Frequency of measurements as per KDIGO for Ca and P had been done in 97.6%, 95.8%, and 92.1% of stage 4, 5, and 5D; respectively. Frequency of three measurements respecting KDIGO in patients was done all three lab test were 100% of stage 4 and 5 and 84% of stage 5D. Adherence to KDIGO guidelines achieved in 8%, 0%, and 9.7%, of stage 4, 5, and 5D; respectively. Calcification screening by ultrasound and x-ray were done for 40% and 28% of patients, respectively which 32% and 17% had at least one calcification, respectively. 87% of all patients used phosphate binder. Types of drugs used were Calcium base binder (92.3%), sevelamer (18.1%), aluminum-based binder (2.2%), and calcitriol (56%).

Conclusions. Findings of the study showed that despite the appropriate information of physicians and adequacy of measurement frequencies, adherence to KDIGO was achieved on a small percentage of patients. This is justified by type of drugs used for this disorders that minority of patients received appropriate medication type and dosage.

P301

The Efficacy of Home Care Education on Knowledge and Performance of Hemodialysis Renal Patients Discharged from Hospitals Related to Uremia Medical Science University

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Introductions. This Research is carried out for the purpose of determining the efficacy of home care education on knowledge and performance of hemodialysis renal patients discharged from hospitals related to uremia medical science university.

Methods. For this experimental research, study populations were consisted of all hemodialysis renal patients discharged from hospitals. From these 70 patients selected as study subjects and then divided to two groups as case and control by randomized method (each group contains 35patients). The independent variable in this study is "home care education" and the dependent variable is "knowledge and performance" of patients. The measures for gathering data in this research consisted of a questionnaire prepared in three parts. First part concerned with determining demographic data of subjects and the second part were a 7 item Knowledge scale and threes part were a 6 item Performance scale. The way of data collecting was interviewing by questionnaire forms to determine their Knowledge and performance in two stages. In the first stage we acquired some demographic information and Knowledge and performance of both groups, then home care education was formed, also booklets regulated for hem dialyses renal patients presented to experimental group. The second stage for study and control group was started after 30 day of last self care education section. In other to analyzing data SPSS were used. Both descriptive statistics and inferential statistics were applied. And research finding were adjusted in 20 tables.

Results. The majority of the samples were female, married and had 25-44 years old. The result of the study show that acquired distinctions average in different Knowledge field was 26.9 before education which leads to 47.7 ($P < 0.001$) for study group. But in control group was 30 in pretest and in posttest was 30.1. The result of the study show that acquired distinctions average in different performance field was 44.4 before education which leads to 76.6 ($P < 0.001$) for study group. But in control group was 46.6 in pretest and in posttest was 45.5. We conclude of independent t test that after education level of Knowledge ($t = 18.4$, $P < 0.001$) and performance ($t = 29.4$, $P < 0.001$) in experimental group was higher than control group in post test. In addition, the findings showed a significant difference between two groups in post-test ($P < 0.001$). Therefore the efficacy of home care education on Knowledge and performance hypothesis for hemodialyze renal patients is proven. Finally, the application of the results in different fields of nursing has been discussed and some recommendations were given for further researches.

Conclusions. Home care education of hemodialysis renal patients increase their knowledge and hence their functions.

P302

Evaluating the Composition of Meals Served for Patients During Dialysis Session in Dialysis Ward of Three Hospitals in Mashhad

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Introductions. Hemodialysis is a successful treatment for management of patients with advanced renal disease that lead to protein-energy wasting (PEW) which is considered a cause for increased mortality. Nutritional health is one of the most important considerations in prevention and treatment of PEW. Composition of food served during dialysis days have not been studied before. The aim of this study is to integrate the meals served in hospitals around the country, besides

improving the nutritional status in hemodialysis patients.
Methods. In a cross-sectional study, the food served during hemodialysis session in three hospitals of Mashhad city from Iran. Two hospitals belonged to the public governmental sector and the other to the private sector was monitored. The composition of meals investigated by nutrition 4 software then micro and macro nutrients were compared with the recommended dietary allowance (RDA) for patients with chronic kidney disease undergoing hemodialysis. The data were analyzed by means of SPSS software version 16.
Results. For three hospitals total mean (± SD) amount of protein, (34.3 ± 19.3), phosphorus (590.9 ± 162.2), and potassium (1267.9 ± 497.2) were significantly higher ($P < 0.001$) on hemodialysis meal than recommended amount. Whereas no significant difference was seen in the case of calcium and sodium ($P > 0.05$) similarly no significant difference was seen between hospitals for the macro and micro nutrient amount of foods ($P > 0.05$).
Conclusions. Content of protein, phosphorus, and potassium of foods served during dialysis session in hospital were high with regard to recommended amount. Maintenance hemodialysis patients should receive adequate amounts of macro and micro nutrient daily especially on dialysis day. For this reasons, a special diet including meals and snacks should design for hemodialysis patients based on all nutritional needs, considerations and Iranian eating culture to be used in centers and hospitals with the hemodialysis unit.

P303

Dose Spironolactone Has Any Effect on Hemodialysis Patient?

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Introductions. We performed this study to assess low dose spironolactone could be administered in hemodialysis patients to improve cardiovascular function without inducing hyperkalemia.
Methods. 35 hemodialysis patients enrolled in this study, 22 patients received 25 mg/QOD of spironolactone without any change on dietary intake, and 13 patients were to control group.
Results. The primary outcome was effect on hypertension and serum potassium. There was no significant effect in blood pressure and no significant rise in serum potassium.
Conclusions. 25 mg of spironolactone thrice weekly no significant effect in blood pressure control and without any significant hyperkalemia require cut off spironolacton, in primary end point.

P304

Evaluating the Effect of Intradialysis Exercise in Hemodialysis Adequacy and Bone Metabolism Indices

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Introductions. Inadequacy of hemodialysis and secondary hyperparathyroidism are two important factors of morbidity and mortality of the hemodialysis patients. Recently, intradialysis exercise has been used for quality of life, anemia or cardiac function improvement. Since there are a few studies about effect of intradialysis exercise and kt/v or serum PTH level, the aim of the study was evaluation of this effect.
Methods. In a cross sectional study, 50 hemodialysis patients were enrolled in two equal groups. For patients of case group intradialysis exercise was prescribed for two months. Minibike equipment was used for intradialysis exercise, 30 minutes per dialysis session, 3 times per week. Control group patients had a similar hemodialysis procedure, without intradialysis exercise program. Kt/v, serum PTH level, calcium (Ca^{2+}), and phosphorus (P) were checked in the beginning and two mounts later in patients of case and control groups. At the end of study, data were entered into SPSS software (version 22) and were statistically analyzed by using independent t test and repeated measures analysis.
Results. Mean age of the patients was 44.15 ± 10.5 years and there is no significant difference between two groups of patients based on age, sex, and BMI. Kt/v in case group were 1.15 ± 0.03 and 1.32 ± 0.03 ($P < 0.05$) at the beginning and the end of the study, respectively. In addition, in case group

urea reduction ratio (URR) were 63.38 ± 1.22 and 68.28 ± 1.1 ($P < 0.001$) at the beginning and the end of the study, respectively. There was no significant difference between serum PTH, ca^{2+}, and P; before and after the study in the case or control groups. Also in the control group there was no significant difference between kt/v or URR before and after the study.

Conclusions. The study showed that intradialysis exercise improved indices of dialysis adequacy (kt/v and URR), so we recommend intradialysis exercise in hemodialysis patients especially in young patients with inadequate dialysis.

P305

The Effect of Counseling with Spirituality Approach on Hope in Hemodialysis Patients

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Introductions. Hope is an important source of adaptation for survival in chronic patients. It health and quality of life. Hopelessness is an important factor in treatment continuous and mortality of hemodialysis patients therefore it is necessary implication of interventions for increase of hope. This study survey the effect of spirituality approach counseling on hope in patients with chronic renal failure.

Methods. This is a quasi-experimental study. The subjects of the study who were selected based on purposive sampling method consisted of 60 patients with advanced chronic renal disease treated with hemodialysis. Before the intervention, two questionnaires were completed by patients. There was no intervention in the control group and the patients received only routine care in the hospital. In the experimental group, the hemodialysis patients received 5 consecutive one-hour training sessions by the researcher. Then the Miller hopefulness questionnaire was filled out by the patients 2 months later.

Results. No significant difference found in hope score between two groups in beginning of study ($P > 0.05$) but significant difference found in hope score in end of study ($P < 0.001$). Significant difference found between Hope scores before and after of spirituality approach counseling in intervention group and before and after in control group.

Conclusions. Counseling with spirituality approach caused hope promotion in hemodialysis patients. Therefore it could implicate as a complementary therapy beside other cares by nurses for this patients.

P306

Study the Relationship Between Some Mental Symptoms with Kt/v Index in Hemodialysis Patients Admitted to Dialysis Center of Dezful Hospited, 2015

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Introductions. Hemodialysis as the main treatment of chronic renal failure, increases the lifespan of patients. However, caused a number of psychological and social problems for them. The present study because of the importance of the issue and the lack of precise information on the relationship between anxiety, depression, and stress with dialysis adequacy in previous studies was conducted.

Methods. This is a cross-sectional study and 75 samples were chosen by census sampling in the hemodialysis unit of the great Hospital in 2015. In order to determine the adequacy of dialysis, kt/v scale was used and also DASS-21 questionnaire was used to assess the level of anxiety, depression, and stress symptoms. Finally, data were analyzed by spss-16 software.

Results. 75 patients (30 female and 45 male), 64% of them were over 50 years, were enrolled in the study. The mean age of the patients was (male 56.68 ± 18.4 and female 54.4 ± 14.1). 44% of participants according to kt/v criteria (male 63.6% and female 36.3%) had dialysis adequacy. The average of kt/v is 1.13 ± 0.33. Diabetic patients

had the most adequacies. Between kt/v with age and sex of patients, there was not a significant relationship (P > 0.05). The prevalence of depression was 54.6% (male 53.6% and female 46.3%), anxiety 66.7% (male 50.3% and female 49.7%), and stress 58.7% (male 54.9% and fame 45.1%). Between psychological symptoms and kt/v was a significant relationship (P < 0.05).

Conclusions. This study showed that relationship that the relationship between symptoms of mental patients and their dialysis adequacy is an inverse relationship. Therefore, it is recommend dead that counseling and psychotherapy centers in hemodialysis centers create or strengthen in order to reduce these disorders.

P307

The Effect of Vitamin D Administration on Treatment of Anemia in ESRD Patients with Vitamin D Deficiency on Hemodialysis, a Placebo Controlled Double-Blind Clinical Trial

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Introductions. Chronic Kidney Disease is known as a progressive and irreversible loss of renal function. The disease has a wide spectrum from proteinuria and creatinine elevation to complete loss of renal function. Anemia is one of the main complications of end-stage renal disease which is linked closely with other complications and prognosis of the disease. The primary therapy for anemia in these patients is erythropoietin; although the patients might develop tolerance to this agent. The goal of this study is to find the effect of vitamin D administration in addition to the appropriate dose of Erythropoietin in ESRD patients.

Methods. This is a double-blind clinical trial on 64 hemodialysis patients in Noor and Amin hospitals of Isfahan, Iran. The patients were divided into two groups of control and intervention and the intervention group was given vitamin D supplements. The required dose of erythropoietin to reach the target hemoglobin was measured and statistically analyzed.

Results. A total number of 32 female and 32 male patients participated in this study. Most of the patients were between the range of 51-60 years old. There was a significant statistical relationship between vitamin D administration and the required dose of erythropoietin between the two groups. But there was no correlation found between the concentration of hemoglobin and vitamin D.

Conclusions. Based on the main finding of this study that is the relationship between vitamin D administration and required dose of erythropoietin in the two study groups, we suggest vitamin D insufficiency as a risk factor for anemia in these patients. We also suggest vitamin D as a therapeutic agent for anemia in patients undergoing hemodialysis with tolerance to erythropoietin therapy.

P308

The Effect of Cool Dialysate on Pruritus During Hemodialysis in Patients with Chronic Renal Failure

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Introductions. Pruritus during dialysis is the most common skin complaint among the patients that are treated with hemodialysis. So that, despite the progress of medical sciences and technology upgrades in the field of hemodialysis, there is still no cure for this problem. so, the aim of this study is determination the effect of cool dialysis on itching in patients during hemodialysis.

Methods. This is a randomized triple–blind clinical trial with two groups and parallel design before and after it and with IRCT number that is done in hemodialysis center of Mashhad 60 patients with chronic renal failure and undergoing hemodialysis, suffering from itching during dialysis. Thirty patients were divided in the intervention group and 30 patients in the control group. Patients in both groups were treatment with dialysis for one week (3 sessions) and used standard solution at 37°C. In the next phase, for the control group used solution at 37°C and the intervention group used solution at 35.5°C for a week (3 days). Itching

severity was recorded using visual analogue scale (VAS) every hour during dialysis sessions. Then data were analyzed using the Mann-Whitney U-test, chi-square, Fishers exact test and generalized estimating equations by using Statistical Software SAS 9.1 and SPSS 11.5 at confidence level 95% and the results of the two groups were compared (In all analyses the significance level was considered as 0.05).

Results. Before the interventions, there was no significant difference between the two groups in terms of severity of itching. After the intervention, it was observed that intervention could reduce the severity of itching more than 3 scores. Given the range 0-10 of itching score, reduction is really significant ($P < 0.001$).

Conclusions. Dialysis with cool solution is a non-drug, simple cheap and easy acceptance by patients' method, it can reduce the severity of itching during dialysis of patients with chronic renal failure.

P309

The Relation Between Oxidative Stress Factors and Serum Levels of Zinc in Hemodialysis Patients of Isfahan Province, Iran

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Introductions. The oxidative stress in hemodialysis patients is higher as compare to normal people. The present study was conducted to assess the relation between oxidative stress factors and serum levels of Zinc in hemodialysis patients of Isfahan province, Iran.

Methods. Subjects were chosen through a random sampling fashion among HD patients. Serum levels of Zinc was measured using atomic absorption and and high-sensitivity C-reactive protein (hsCRP) was measured using agglutination method.

Results. Serum levels of Zinc in study population was 96.7 ± 20 (mean ± SD) and 12% of patients showed Zinc deficiency. Serum albomin level (3.73 ± 0.51) was significantly lower than normal level and hsCRP (16.78 ± 9.71) was significantly higher than normal level. An inverse correlation was seen between serum Zinc and hsCRP.

Conclusions. This study showed a negative relation between serum level of Zinc and hsCRP in HD patients. Therefore administration of Zinc supplements in these patients could be recommended.

P310

Epidemiologic Study of End-Stage Renal Disease and Related Risk Factors in Patients Under Hemodialysis in Lorestan Province, Iran

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Introductions. Prevalence of end-stage renal disease (ESRD) is increasing in the world. Because of clinical importance of ESRD and absence of significant data, we studied the epidemiology of end stage renal failure in patients under hemodialysis in Lorestan province.

Methods. This descriptive cross sectional study was carried out between January 2012 and January 2013 in dialysis centers of Lorestan university of medical sciences. Subjects were selected by census method and data gathered using a questionnaire. At the end, collected data were analyzed by SPSS software, descriptive statistics and chi-square test.

Results. All the patients under hemodialysis were 318 cases, 182 out of them (57.2%) and 136 (42.8%) were male and female respectively. The mean age of the subjects was 53.2 ± 16.4 years. The causes of renal failure in 38.1% of the patients were hypertension, diabetes (19.2%), and unknown factors (27.4%). As well as 5.97% of the patients infected by HCV, HBV, or HIV. A significant statistical difference was observed between causes of chronic renal failure and different ages of the subjects ($P < 0.05$).

Conclusions. Augmentation of screening programs and especially, early referral of high risk subjects to nephrologists is recommended for prevention of ESRD.

P311

Relationship Between Parathyroid Hormone, Calcium, and Phosphorus Level and Peak Oxygen Uptake in Hemodialysis Patients

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Introductions. The measurement of exercise capacity through peak oxygen uptake is an important factor in predicting mortality and survival in patients with end-stage renal disease. Abnormality in bone mineral metabolism is common in hemodilysis patients. In this study, we investigate relationship between this abnormality and peak oxygen uptake.
Methods. 33 renal transplant candidates under hemodialysis were evaluated through spirometery and exercise Test. The effect of calcium, phosphorus, and parathyroid hormone level on VO2 max was evaluated.
Results. Between these 33 patients the average amount of phosphorus, calcium, and parathyroid hormone (PTH) on order was 6, 9.14, and 360.7. After dividing of VO2 max in 2 groups including normal (≥ 20) and abnormal (< 20) and analysis via independent t test. We found that there was a correlation between phosphorus and VO2 max, but there wasn't a correlation between calcium and PTH level with VO2 max.
Conclusions. In renal transplant patients hypophosphatemia may decrease VO2 max by reducing energy of skeletal muscles. The correction of this factor may lead to more survival and less mortality in patients with end-stage renal disease expecting renal transplantation.

P312

Pericardial Effusions in Patients with End-Stage Renal Disease

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Introductions. Pericardial effusion and pericarditis are responsible for 3-5% of deaths due to tamponade, fatal arrhythmia, and heart failure. After great improvements in dialysis techniques in addition to starting dialysis at earlier stages of renal diseases, there has been a dramatic decrease in the rate of pericarditis, while pericardial effusion is still common, especially 15%-20% of small-size studies. This study headed to provide reliable data on the prevalence of pericardial effusion and its predisposing factors among ESRD patients undergoing dialysis for a long time focusing on two referral centers in Tehran, the capital of Iran in order to help health decision makers improve the relevant registry system for the mentioned complications.
Methods. Through a cross-sectional study between Shariati hospital and Tehran heart center, referrals to two centers of dialysis in Tehran including cases of end-stage renal disease (ESRD) with a GFR < 10 cc/min, also called chronic hemodialysis, consented to be echocardiographically evaluated were recruited. Existing pericarditis and/or pericardial effusion cases due to non-uremic or dialysis-induced causes were excluded.
Results. Pericardial effusion was observed in 17 (12.9%) with low, 8 (6.1%) with moderate, and one (0.7%) with high severity. Among females, 9 (15.8%) showed pericardial effusion which was just less than the reported 8 (10.7%) involved males without any significant difference. Significant differences were realized neither for the mean age of the patients with and without pericardial effusion (50.5 ± 15.5 vs. 52.8 ± 16.1, respectively) nor for the mentioned etiologies of ESRD.
Conclusions. Considering mortality and morbidity resulting from pericardial effusion and pericarditis, especially in ESRD patients experiencing hemodialysis as well as similar symptoms of uremic and non-uremic pericarditis, pericardial effusion, cardiac tamponade and constrictive pericarditis in addition to the majority of symptom-free cases, this research concludes that early echocardiography may be advised at dialysis initiation. Normal serum BUN and Cr concentrations are not solely reliable

predictors of effective hemodialysis.

P313

Sleep Quality and Depression and Their Association with Other Factors in Hemodialysis Patients

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Introductions. Sleep disorders and depression, accompanied by reduced quality of life and increased mortality are the most common psychological problems in dialysis patients. This study was conducted with the aim to investigate depression and sleep quality and their association with some demographic and clinical factors in hemodialysis patients.
Methods. This descriptive-correlative study was conducted on 310 patients undergoing hemodialysis in 8 centers in educational hospitals in Mazandaran university of medical sciences. Data collection tools included a demographic questionnaire, Beck depression inventory, and Pittsburg sleep quality index (PSQI). Statistical analysis was conducted using chi square test and regression model.
Results. Results obtained showed 44.8% depression in patients. Significant relationships were found between depression and increased blood phosphorus ($P < 0.05$) and urea ($P < 0.001$). Poor sleep quality was observed in 73.5% of hemodialysis patients, which was found significantly related to aging ($P < 0.05$), gender ($P < 0.05$), and reduced frequency of weekly hemodialysis ($P < 0.05$).
Conclusions. Depression and poor sleep quality are two common factors in hemodialysis patients, but patients do not overtly show symptoms of these disorders.

P314

Relationship Between Neutrophil to Lymphocyte Ratio and Inflammation in End-Stage Renal Disease Patients

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Introductions. CKD and ESRD is thought to be a state of micro inflammation, which cause atherosclerosis, cardiovascular disease and increased incidence of microbial infection. Systemic inflammation in this group of patients is evaluated by increased serum level of inflammatory markers including hsCRP. In recent years, neutrophil to lymphocyte ratio (NLR) was proposed as a potential marker to estimate the level of inflammation in different disorders. The aim of this study was to assess the association of hsCRP, which is used as a standard marker of inflammation according to KDIGO guidelines with NLR in ESRD patients under hemodialysis (HD) or peritoneal dialysis (PD) treatment.
Methods. This cross-sectional cohort study was conducted on 218 patients with end-stage renal disease included 176 HD and 32 PD patients. Patients with active infection and malignancy were excluded. Peripheral blood samples were analyzed for hsCRP and complete blood count with automated differential counts including total WBC, neutrophils, and lymphocytes. NLR was calculated as the ratio of neutrophils to lymphocytes in the same sample. Enzyme-linked immunosorbent assay method was used for hsCRP by photometric method using bionic kits. Pierson-regression correlation test was performed to assess this correlation.
Results. Of 208 participated patients, 105 (50.5%) were male and 103 (49.5%) were female and the mean age of the patients was 53.88 ± 16.21 years. The mean hsCRP was 11.95 ± 14.30 mg/dL in PD patients, and 9.19 ± 14.26 mg/dL in HD ones. The mean NLR was 13.74 ± 11.25 and 7.67 ± 7.67 in HD and PD patients, respectively. NLR in both HD and PD patients was positively correlated with hsCRP. Positive hsCRP (hsCRP > 3) were correlated with NLR > 3. A strong correlation was found between NLR and hsCRP ($P < 0.001$, $r = 0.817$).
Conclusions. An easy and inexpensive test of NLR > 3 could be used as a measure of inflammation in both PD and HD patients.

P315

Ambulatory Blood Pressure Measurement in Chronic

Hemodialysis Patients with Intra-Dialytic Hypertension

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Introductions. Increasing blood pressure (BP) during maintenance hemodialysis (HD) or intra-dialytic hypertension (IDH) is associated with increased morbidity and mortality. It is known that home and ambulatory BP measurements (ABPM) from the inter-dialytic time period are better predictors of mortality than individual pre or post-HD BP measurements. We hypothesized that patients with IDH have higher inter-dialytic ABPM indices than those without IDH.
Methods. That was a case-control study that was done on 56 HD patients who have achieved dry weight and had pre-dialysis BP of at least 130 mmHg. Twenty-nine patients were put in group 1 (those with IDH, defined as rise in systolic BP (SBP) > 10 mmHg from pre- to post-dialysis at least in 4 HD sessions) and 27 in group 2 (those with a rise in SBP < 10 mmHg). ABPM was done for 44 hours after a mid-week dialysis session.
Results. In group 1 and 2, average age was 52 ± 11.3 and 48.4 ± 11.5 years ($P > 0.05$) which was not significantly different. The average inter-dialytic weight gain for 6 sessions was 2.32 and 2.48 kg for group 1 and 2; respectively ($P > 0.05$). Two-week averaged pre-dialysis SBP was 146.6 ± 11 and 146.8 ± 12 mmHg and two-week averaged post-dialysis SBP was 156.4 ± 12 and 136.7 ± 11 mmHg in group 1 and 2; respectively ($P > 0.05$ and $P < 0.001$). Forty-four hours and daytime ambulatory SBPs were significantly higher in IDH group (group1) than group 2; 157.3 ± 20 vs. 146.5 ± 16 mmHg and 159.9 ± 20 vs. 147.4 ± 15 mmHg; respectively ($P < 0.05$ and $P < 0.05$). In group 1 (IDH group), averaged HD unit SBP had a more significant correlation with 44 hours ambulatory SP than pre and post dialysis measures ($r = 0.85$, $P < 0.001$).
Conclusions. Our study showed that patients who have intra-dialytic rise in blood pressure have higher ABPM indices and might need higher dose of antihypertensive drugs despite normal pre-dialysis values. In these patients, averaged HD unit SBP might be a better determinant of the overall BP status.

P316

Evaluation of Cutoff Point and Power of Neutrophil to Lymphocyte Ratio in Diagnosing Chronic Inflammation in End-Stage Renal Disease (ESRD) Patients

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Introductions. Inflammation can increase mortality and morbidity rate of ESRD patients. In some studies, neutrophil to lymphocyte ratio and platelet to lymphocyte ratio were evaluated to detect inflammation. This study was conducted to evaluate the deterministic power, specificity and sensitivity of neutrophil to lymphocyte ratio and Platelet and lymphocyte ratio in detecting inflammation indicated by serum albumin and c-reactive protein (CRP).
Methods. According to our inclusion and exclusion criteria, we recruited 120 patient with ESRD admitted to Loghman hospital and Ashrafi Esfehani hospital were examined retrospectively in our study. Data were collected from hospital documents.
Results. Basis on our study, neutrophil to lymphocyte ratio and platelet and lymphocyte ratio didn't show a significant difference between normal patients and patients with inflammation.
Conclusions. Although neutrophil to lymphocyte ratio and platelet and lymphocyte ratio are related to inflammatory conditions, but sensitivity and specificity of these testes are low for detecting inflammation.

P317

Assessment of Relationship Between Bioelectrical Impedance Parameters with Dialysis Adequacy in Patients Undergoing Hemodialysis

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Introductions. Kt/v urea was established as an index of haemodialysis (HD) adequacy. In this study, we evaluated relationship between bioelectrical impedance parameters with dialysis adequacy in patients undergoing HD.
Methods. Kt/v was calculated in 42 patients undergoing HD (17 males and 26 females), then bioelectrical impedance parameters including total body K (TBK) and glycogen content, body and extra cell mass (BCM and ECM), total body fat, total body water (TBW), intra- and extra-cellular water (ICW and ECW) and ECW/ICW were measured. Pearson correlation analysis was used for determining correlation between variables.
Results. There were a significant inverse correlation between kt/v with TBK, total body glycogen content, BCM, ECM, TBW, ICW, and ECW in patients undergoing HD. But there was no correlation between kt/v with total body fat and ECW/ICW. By sex, in men; there was a strong inverse correlation between kt/v with TBK, total body glycogen, BCM, and a moderate inverse correlation with ECM. In women, there was a strong inverse correlation between kt/v with ECM and a moderate inverse correlation with body K and glycogen content, BCM, and ECW.
Conclusions. The results showed a significant inverse correlation between dialysis adequacy with some bioelectrical impedance parameters including TBK, total body glycogen, BCM, ECM, TBW, ICW, and ECW in patients undergoing HD.

Third Day

P318

Relationships Between Nutrition, Inflammation, Comorbidities, Outcomes, and SF36 Quality of Life in Hemodialysis Patients, a Multicenter Study

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Introductions. Patients on maintenance hemodialysis generally display a significant decrease in quality of life owing to comorbidities, malnutrition, and inflammation.
Methods. In this multicenter prospective cohort study, the SF36 (short form with 36 questions scored between zero and 100) and relevant demographic data and comorbidities (Charlson comorbidity index); nutritional factors of body mass index and serum albumin, creatinine, predialysis blood urea nitrogen (BUN), cholesterol, transferrin, and inflammatory factor of C-reactive protein (CRP) were evaluated in 416 patients. Hospitalization frequency and mortality were assessed in a 28-month follow up.
Results. In multiple linear regression analysis after adjustment for demographic factors, we observed a significant direct correlation between SF36 score and serum creatinine (0.18, $P < 0.001$) and serum albumin (0.19, $P < 0.001$). Charlson comorbidity index (-0.36, $P < 0.001$), and serum CRP (-0.23, $P < 0.001$) had significant inverse correlation with SF36. Patients with BMI less than 18.5 revealed lower SF36 score. The correlation coefficient between SF36 and annual hospitalization frequency was -0.23 ($P < 0.001$). In cox-proportional hazard model after adjustment for demographic variables, hazard ratio of death for each ten score decrease in SF36 was 1.41 (95% CI, 1.29-1.54; $P < 0.001$). Among the eight scales of the SF36, social functioning and mental health had the least association with mortality.
Conclusions. In maintenance hemodialysis patients, SF36 shows significant correlation with nutritional factors, comorbidities, inflammation, and clinical outcomes of hospitalization and mortality.

P319

Effect of Omega-3 on Itching Rate in Patients Undergoing Hemodialysis

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Introductions. Skin itching (pruritus) is a serious disorder across the skin derangements, defined as a continuous painful sensation that provokes the craving to scratch. In about 50-90% of cases undergoing hemodialysis or peritoneal dialysis, the chronic itch is the most worrisome dermatological symptom associated with end-stage renal disease (ESRD). A suggestion expressed by a literature review according to fish oil supplementation effects on hemodialysis therapy, demonstrated that supplementation is efficient for health improvements in this individuals. Findings due to the good effects of fish oil on hemodialysis patients, in this study, we sought to investigate the effects of omega-3 for treatment of pruritus in hemodialysis patients.

Methods. Double-blind, randomized, placebo controlled crossover study was undertaken at two dialysis centers in Noor and Amin hospitals (Isfahan, Iran) from September 2013 to March 2014, on hemodialysis patients suffering from pruritus. Forty patients were randomly assigned to group A or group B. Patients in group A were allocated to treatment with omega-3 (3 capsule per day) and placebo in that sequence, and patients in group B, in the reverse sequence, were allocated to treatment with placebo and omega-3. Between each treatment period there was a 6-week washout period score of pruritus before each treatment and after treatment within groups was compare using Wilcoxon tests, and between groups was compare using Mann-Whitney test.

Results. There were no significant differences between groups for age, sex distribution, duration of dialysis, and cause of ESRD in groups A and B ($P > 0.05$). In the head-to-head comparison in the first treatment period, mean of pruritus score before omega-3 treatment and placebo were 5.9 ± 2.8 and 5.5 ± 3.2, respectively ($P > 0.05$), and after omega-3 treatment and placebo were 4.8 ± 3.3 and 5.6 ± 3.2, respectively ($P > 0.05$). In the second treatment period, mean of pruritus score before omega-3 treatment was 6.8 ± 2.3 and before placebo was 5.6 ± 3.1 ($P > 0.05$). After omega-3 treatment was 3.3 ± 2.5 was significantly lower than after placebo in second period which was 5.5 ± 2.5 ($P < 0.05$). Also, results of paired analysis of treatment effect showed that median of pruritus score in the first period before omega-3 treatment was 5 [IQR, 4-9.2] and after omega- 3 treatment was 5 [IQR, 2-6.7] ($P < 0.05$), before and after placebo were 5 [IQR, 2.5-9] ($P > 0.05$). In the second period, median of pruritus score was not different before and after placebo ($P > 0.05$), but in omega-3 treatment at before was 6 [IQR, 4.2-9.5] and significantly decreased to 2 [IQR, 2-4] in after treatment ($P < 0.001$). Prostaglandin E2 at line was 625.2 ± 501.5 and there was no correlation between level of prostaglandin E2 and pruritus score ($P > 0.05$). Also, after treatment the mean of prostaglandin E2 was 548.9 ± 446.2, there was no correlation between level of prostaglandin E2 and pruritus score after treatment in first period ($P > 0.05$).

Conclusions. In conclusion, omega-3 fatty acids appear to be more impressive than placebo in diminishing of uremic pruritus in hemodialysis patients. Our result demonstrates that omega-3 treatment significantly decrease pruritus in ESRD patients and concretely suggested to be used in remedy of uremic pruritus in ESRD patients. There was no correlation between level of prostaglandin E2 and pruritus score after treatment in first period.

P320

The Effectiveness of Systemic Antibiotic Therapy With and Without Ethanol-Locked Solution in the Treatment of Hemodialysis-Related Catheter Infection

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Introductions. Bacterial overgrowth in the inner layer of the catheter as a biofilm is highly encountered in routine medical care, and it may occur in a few days after inserting a catheter as an access in hemodialysis patients. Catheter-induced bacteremia is often due to the development of biofilms. Locking catheters with antimicrobial agents is an effective way of reducing the risk of catheter-related infection.

Methods. In a controlled, randomized clinical trial, 64 chronic HD patients (32 men and 32 women with a mean age of 57.5 ± 15.6 years) were divided into

case and control groups, with 32 patients in each group. The case group received systemic antibiotic and a lock of catheters with 60% ethanol and the control group received only systemic antibiotic.
Results. The results were evaluated after three weeks of treatment. The success rate of clearing infection in group A and B was 29, 18 patients that showed significant improvement in case group (90.6% vs. 56.2%, respectively; $P < 0.05$).
Conclusions. We conclude that the significant difference in the success rate of clearing catheter infection in HD patients is due to the use of 60% ethanol-lock along with antibiotic therapy, and suggest this for routine use.

P321

Traumatic Left Renal Artery and Renal Vein Thromosis Followed by Acute Kidney Injury with Normal Right Kidney: A Case Report

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Introductions. Blunt renal artery injury is a high grade injury that may result in renal dysfunction, hypertension, or failure. Renal vascular injury in general occur in less than 5% of blunt abdominal trauma and blunt renal artery injury is even less, between 0.05 - 0.08%. Diagnosis and treatment may improve kidney function. We report a case of acute traumatic left renal artery thrombosis and partial left renal vein thrombosis with delayed diagnosis. Acute kidney injury occurred in normal right kidney.
Methods. A 29-year old male admitted in emergency due to blunt trauma after motorcycle accident. He complained of right shoulder and low back pain after falling. On physical examination vital signs were normal and there was tenderness on lumbar spine and flanks. There was 2 x 3 cm echymosis on left flank. After insertion of folly catheter, dark urine was observed. Tomorrow morning, the patient referred to Firoozgar hospital. Vital signs were normal. Renal sonography was normal but serum creatinine was 4.9. On second day of admission, nephrology consultation was done. Serum creatinine raised to 6.54, CPK = 2100, LDH = 2300, uric acid = 8.6. On physical examination echymosis extended to left flank (10 x 20 cm). In doppler sonography left kidney vessels could not be visualized, and right kidney paranchymal arterial RI reported 0.8 in favor of ATN. Abdominal CT angiography requested, and massive left renal infarction with wedge shape appearance and partial left renal vein thrombosis were reported. We only observed and do conservative management, because of delayed diagnosis and massive infarction. Diuresis occurred after 2 times hemodialysis and creatinine became normal on 10th day after trauma.
Results. Renal artery thrombosis is a rare and often misdiagnosed condition. In cases with blunt trauma CT scan with contrast is a proper diagnostic tool. In this case gross hamaturia and oliguria were the key points for rapid diagnosis. We could not find acute kidney injury with one normal perfused kidney. This case had not hypotension and there was slow decline in hemoglobin from 11.2 to 8.6 during hospital stay. Renal dysfunction can be due to contusion and ischemia of right kidney (there was no clue in imaging) or due to severe vasoconstriction due to massive infarction of left kidney.
Conclusions. We recommend attention to urinalysis, urine output and serial creatinine measurement for rapid diagnosis and treatment of patients with blunt trauma and suspected renal vessel injury.

P322

The Effect of Pentoxifylline on Improving of Anemia Hyporesponsive to rh-EPO Among Patients with ESRD on Chronic Hemodialysis, a Randomized, Double Blind Clinical Trial

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Introductions. One of the important problems of patients with end stage renal disease and hemodialysis is anemia. The variability in the response to recombinant EPO in many cases is due

to increased immune activity and inflammatory cytokines productions. Pentoxiphyllin used in the treatment of peripheral and cerebrovascular disease for over two decades. Later, it was found that this drug has significant anti inflammatory properties. It has been shown that pentoxiphyllin decreases inflammatory markers in patients with CKD. This drug could be a promising and useful strategy to reduce the systemic inflammation frequently observed in hemodialysis patients. Based on a few previous trials, it is possible that pentoxiphyllin improves anemia in patients with ESRD due to its anti-inflammatory effect. This study was designed to assess the effect of pentoxiphyllin on improving of anemia in patients with ESRD on hemodialysis.
Methods. This is a randomized double-blind, placebo-controlled clinical trial. Patients eligible for this study are divided into two groups. Patients in the case group took 400 mg of pentoxifylline daily for 4 months, while the control group took placebo for the same time. For all patients that participate in the study, measurement of the hemoglobin, ESR, CRP, and serum iron profile including ferritin and TIBC was done.
Results. Of the 60 patients, 32(53.3%) were female and 28 (46.7%) were male. At the beginning of the study there were no significant differences in demographic and clinical characteristics of patients, exept CRP that higher in the case group. At the end of the study, the mean changes in hemoglobin concentrations in the case group was 1.1 ± 1.5 gr/dL and in the control group was 0.3 ± 1.3 gr/dl ($P < 0.05$). The mean hemoglobin level in the treatment group was significantly higher than the placebo group ($P < 0.05$). In addition means of ESR and CRP levels in the pentoxiphyllin group were significantly lower than placebo group ($P < 0.05$, $P < 0.05$; respectively). At the end of the study the required dose of EPO in the pentoxiphyllin group was significantly lower than other group while required dose of venofer was not ($P < 0.05$, $P > 0.05$; respectively). Ferritin levels were not significantly different between the two groups, whereas TIBC levels at the end of the study were significantly higher in the treatment group ($P > 0.05$, $P < 0.05$; respectively).
Conclusions. Pentoxiphyllin treatment can decrease inflammation in patients on hemodialysis and improve anemia in these patients.

P323

An Educational Intervention to Reduce Central Venous Catheter Related Infections

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Introductions. This study aimed to evaluate the effectiveness of evidence-based intervention guidelines to reduce central venous catheter related infection in hemodialysis patients.
Methods. This study was conducted at Shariati hospital, an 834 bed teaching hospital in Iran, affiliated with the Tehran university of medical sciences. The study aimed to compare the rates of central venous catheter related infections in patients admitted between 2011 and 2012, before and after a staff training intervention. The initial phase was conducted from June to December 2011 during which baseline data was collected from the majority of hospital wards, during phase 2 (from January to May 2012) an educational intervention was implemented, which included a focused presentation of policies to reduce infections and direct training of registered nurses and physicians. Phase 3, or the post intervention period, conducted from June to December 2012, evaluated the effectiveness of the training.
Results. During phases 1 and 3, 144 and 170 patient with catheters were observed, from which catheter related infections were identified in 26 and 11 patients; respectively. The rate of infection was decreased from 18.1% at baseline to 6.5% following the intervention ($P < 0.05$). The results of our study indicate that the influence of having knowledge about behaviors related to catheter infection can be considered as a key protective factor in reducing infections among hemodialysis patients.
Conclusions. This study demonstrated that intensive training is an effective factor in controlling infection and improving prevention policies among nurses and physician in large teaching hospitals or dialysis wards.

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Which Echocardiographic Parameter Is Better Marker of Volume Status in

Hemodialysis Patients?

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Introductions. Bio-impedance analysis (BIA) has been proven to be a preferred method for estimating volume status. However, it could not be done in daily practice. Since the assessment of volume status is important and challenging in hemodialysis (HD) patients, the aim of study was to determine the volume status among chronic HD patients using echocardiographic parameters and its correlation to BIA.
Methods. In this cross-sectional analysis, echocardiography and BIA were done 30 minutes before and 30 minutes after dialysis in 30 chronic HD patients. All of dialysis was done in midweek session. Correlation between echocardiographic parameters and BIA parameters were assessed.
Results. A significant difference was seen at echocardiographic parameters such as IVCD, LAsq, LA area, LVEDD, LVESD, PCWP, Mitral valve inflow, E/E', IVRT, PAP, PCWP, IVCDimin, and IVCDimax before and after HD. However, EF, DT, E, IVS, and IVC collapsability index had not significant change after HD. In addition, there was significant difference between ECW measurement, TBW measurement, %TBW (TBW/W) before and after HD. There was significant correlation between IVCDimin and %ECW and %TBW before HD.
Conclusions. Findings of this study showed that correlation between IVCDimin and BIA parameters before HD. So, it seems that IVCDimin could be a good parameter in determination of volume status of HD patients. However, these results require confirmation of future studies with larger sample size and prospective study design.

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Relation of Serum ProBNP Level and Echocardiographic and Bio-Impedance Analysis Findings in Chronic Hemodialysis Patients

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Introductions. Although ProBNP has been reported as a predictor of survival in peritoneal dialysis, the role of ProBNP in hydration status and cardiac disorders of chronic hemodialysis (HD) patients is not clear. So, the aim of this study was assessment of relationship of serum ProBNP level and clinical exams, echocardiographic and bio-impedance analysis (BIA) findings.
Methods. This cross-sectional study was conducted in 2014 in 30 chronic HD patients of Labbafinejad hospital, Tehran. Age > 18 years old and dialysis > 3 months were inclusion criteria, while having pacemaker or metal protesis, limb amputation, sever valvular disease, AF, right heart failure, EF < 50%, pericardial or pulmonary diseases, pulmonary hypertension and urine volume more than 400 cc/d were considered as exclusion criteria. Demographic and kidney disease characteristics, clinical exams, and laboratory results recorded prior to dialysis. In addition, a blood sample for ProBNP measurement was taken. Echocardiography and BIA done half hour before dialysis. ProBNP level categorized to ≤ 4000 pg/mL and > 4000 pg/mL. All collected data were compared between these two groups.
Results. 17 patients (57%) were male and mean (± SD) of age of patients was 50 ± 17 years. Mean (± SD) of dialysis duration was 7 ± 7 years. ESRD cause was unknown in half of patients. Systolic and diastolic blood pressure and also P and iPTH were significantly higher in patients with ProBNP > 4000 ($P < 0.05$). Clinical exams and BIA parameters were not different between two groups ($P > 0.05$). In echocardiographic parameters, IVC diameter, LA area, IVCD index max, and IVCD index min were significantly higher in patients with ProBNP > 4000 ($P < 0.05$).
Conclusions. Findings of present study showed that, in chronic HD patients, structural cardiac disorders were more seen in patients with high level of ProBNP.

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The Comparison of Serum Omentin Concentration in Hemodyalisis Patients and Healthy Adults

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Introductions. The incidence of renal failure is increasing. Its most causes of mortality are chronic inflammation and atherosclerosis. Recently many studies published about omentinand inflammatory reactions and atherosclerosis. The aim of this study is comparison of serum omentin in hemodialysis patients and healthy subjects and its relation to inflammatory markers.
Methods. This case control study was carried out on 55 hemodialysis patients and 30 healthy subjects.Anthropometry index and blood pressure were measured and recorded. Blood samples were collected from all subjects. Serumomentin was measured by ELISA technique. Data was analyzed in SPSS software.
Results. The mean age of hemodialysis patients and healthy subjects were 50.81years and 49.70 years respectively. The most prevalent causes of renal failure were high blood pressure (34.6%), diabetes (23.6%) and renal polycystic disease (9.1%). Serum omentin was significantly higher in hemodialysis patients (2.15 ± 1.46 µg/ml) than controls (0.78 ± 0.07 µg/ml). There was no correlation between omentin and Creatinine in hemodialysispatients. There was a positive correlation between omentin and blood glucose (r = 0.590, P = 0.001) in all subjects, but this correlation was weak in hemodialysis patients (r = 0.304, P = 0,012). In all subjects there was a negative correlation between omentin and serum cholesterol (r = -0.323, P = 0.001). There was a negative correlation between omentin and serum triglycerides in hemodialysis patients. (r = -0.244, P = 0.045).
Conclusions. The finding of this study showed the serumomentin is higher in hemodialysis patients. It has positive correlation with blood glucose and creatinine and negative correlation with triglycerides .since the level of omentin dependsan various factors but we could not find any relation betweenomentin and renal failure.

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The Effect of Oral N-Acetyl Cysteine on Inflammatory Markers in Hemodialysis Patients

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Introductions. Oxidative stresses are very common in patients receiving hemodialysis. Evidence of increased oxidative stress in these patients and its association with increased cardiovascular disease suggest that antioxidant therapy may reduce mortality from cardiovascular disease in these patients. So we decided to evaluate the effect of N-acetyl cysteine on inflammatory markers in these patients.
Methods. This study is a clinical trial (before and after design) that was performed on 32 patients receiving hemodialysis. They received NAC, 600 mg twice daily for 2 months. Blood samples were drawn before and after 2 month for highly sensitive CRP, and Malondialdehyde.
Results. 26 patients consisted of 22 men (86.4%) and 4 women (15.4%). The mean age was 55.81 ± 14.13. The mean duration of hemodialysis was 4.59 ± 3.64 year. In the first, mean level of hsCRP was 6.377 mg/L that changed to 3.723 mg/L after treatment. The difference was statically significant ($P < 0.05$). After and before treatment Malondialdehyde level was not changed significantly.
Conclusions. This study suggests that N-acetyl cysteine can decrease inflammation in patients receiving hemodialysis.

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Anti-Inflammatory Effect of Turmeric in Patients Undergoing Hemodialysis

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Introductions. In different studies, chronic inflammation predicts all-cause and cardiovascular mortality in hemodialysis patients. The causes of inflammation in hemodialysis are multifactorial and consist of both dialysis-related and unrelated factors. So suppression of the inflammation seems to be logical and could improve survival and diminish co-morbidity in hemodialysis patients. In different trials turmeric has been demonstrated to be safe with anti-inflammatory activity. Its anti-

inflammatory activity may be done by inhibition of a number of different molecules that play a role in inflammation. The aim of this study was to evaluate anti-inflammatory activity of turmeric in hemodialysis patients.

Methods. 71 hemodialysis patients with 3 to 22 year dialysis duration, aged between 18 to 80 years old were recruited after fulfilling the inclusion criteria. Patients were randomly separated in 2 groups which trial group received turmeric and control group received placebo for 3 months. Plasma level of IL-6, TNF-α, CRP, highly sensitive CRP (hsCRP), albumin, potassium, and liver enzymes were measured before, during and at the end of the study.

Results. Although there was a significant reduction in hsCRP level, IL-6 level and TNF-α level in turmeric group ($P < 0.05$, $P < 0.001$, $P < 0.001$), there was no significant difference between 2 groups. Albumin level was significantly increased in turmeric group ($P < 0.001$) and no significant changes were seen in potassium, ALT, AST and CRP level neither within nor between groups.

Conclusions. Programmed ingestion of turmeric has no adverse effects and reduces plasma level of hsCRP, IL-6, and TNF-α and increases albumin levels in HD patients. Turmeric can be considered as an effective anti-inflammatory supplement in hemodialysis patients.

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A Regression Model for Predicting Increased Level of Serum Interleukins 6 and 10 in End-Stage Renal Disease Patients under Chronic Hemodialysis

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Introductions. Chronic kidney disease (CKD) is progressive kidney dysfunction for more than 3 months. High level of cytokines, including interleukin (IL)-6 and -10 are described as independent risk factors for morbidity and mortality in CKD patients. Current study was designed to evaluate factors predicting levels of IL-6 and IL-10 in end-stage renal disease patients undergoing hemodialysis.

Methods. In this analytical cross-sectional, patients referring hemodialysis ward of Loghman-e-Hakim hospital in 2014 were randomly selected. Demographic data, laboratory data (albumin, creatinine, calcium, phosphorus, PTH, CRP, CBC, ferritin, Il-6 and IL-10, and arterial blood gas) were measured. Correlation between interleukins and serum bicarbonate and other variables were evaluated by SPSS software and the regression models were designed with stepwise method for IL-6 and IL-10 in chronic hemodialysis patients.

Results. Eighty four patients with mean age of 60.98 years and mean dialysis duration of 35.05 months were evaluated. The mean serum levels of IL-6 and IL-10 was 6.036 pg/mL and 17.46 pg/mL, respectively. Five variables (IL-10, $HCO3^-$, PH, and diabetes) were remained in the IL-6 model ($R2 = 0.813$), and Five variables (IL-6, $HCO3^-$, PH, and diabetes) were remained in the IL-10 model ($R2 = 0.846$).

Conclusions. According to results, arterial blood bicarbonate, PH, and diabetes could consider as a prognostic factor to differentiate increased levels of IL-6 and IL-10 and related morbidity and mortality. Proving of this correlation needs more evaluations.

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Comparison of Exercise Tolerance Test Results Among Type 2 Diabetic Patients With and Without Nephropathy

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Introductions. Ischemic heart disease (IHD) is the most important leading cause of death in diabetic patients. In addition, diabetic nephropathy, in the form of microalbuminuria or overt proteinuria can duplicate the risk of IHD in these patients; however, the screening of IHD is controversial in asymptomatic diabetic patients especially in patients with diabetic nephropathy. The aim of this study was to compare the exercise test parameters among diabetic patients with and without nephropathy.

Methods. In a cross-sectional study, 31 diabetic patients without nephropathy and 29 patients with diabetic nephropathy were enrolled; however, only 26 and 24 patients with and without nephropathy were completed the study, respectively. All patients underwent treadmill test with Bruce protocol. Exercise test parameters such as heart rate recovery (HRR), maximal heart rate, VO2 max and METS were evaluated for each patient by a cardiologist. **Results.** There were not any significant difference between two groups of patients based on age, sex, and cigarette smoking ($P > 0.05$). There were also no significant difference regarding to maximal HR, metabolic equivalent (METS), and maximum volume of O2 (VO2 max) between two groups ($P > 0.05$). However, HRR was significantly lower in patients with nephropathy ($P < 0.05$). Exertional ischemia was found in 25% of patients with nephropathy and 3.9% of patients without nephropathy ($P < 0.05$). **Conclusions.** Based on our findings, some indices of ETT are more common among the diabetic patients with nephropathy, so it is recommended the application of ETT as a noninvasive screening test for evaluation of ischemic heart disease in type 2 diabetic patients with nephropathy.

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