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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14ᵗʰ International Congress of Nephrology, Dialysis, and Transplantation Isfahan 2014

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IRANIAN JOURNAL OF KIDNEY DISEASES
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ABSTRACTS

First Day

Wednesday, February 12

First Day

O101

Hemodialysis Data Processor Software (HDPS), Introduction of the First Integrative Hemodialysis Software in Iran

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Introduction. Computers came somewhat late to dialysis, but they are now commonly used in many dialysis facilities all over the world. Dialysis software is necessary for compilation and analysis of clinical data, to manage quality of care and to meet guidelines. Initial entry of demographic and clinical information at the onset of dialysis treatment can be subsequently used in patient care and follow-up, insurance and billing issues and referrals. Pooling of the national data can feed registries and help national evaluations and decision making. In Iran, to date, no hemodialysis software has been widely used in dialysis units and other than general demographic data collected by the Ministry of Health, which covers the basic demographic and survival data, centers do not have a reliable program for collection and registration of patients' baseline information, monthly laboratory findings, quality surveillance and documentation of dialysis sessions.

Methods. To meet the above-mentioned needs, a dialysis software program was designed and developed in Hasheminejad Kidney Center. This software includes pages containing patients' demographic data (age, sex, marital status, educational level, job, cause of renal failure, history of renal replacement therapy, hepatitis B and C status, addictions, Charlson Comorbidity Score, type of vascular access and its complications, dry weight, blood flow rate, number of weekly sessions, cause and date of death, transplantation, transfer or recovery), monthly medical laboratory values, KT/V and its variances (URR, spKT/V, eKT/V, stdKT/V), protein catabolic rate (direct and indirect), monthly visits and prescriptions and characteristics of every dialysis sessions.

Results. According to designed parts, the software can demonstrate the mentioned demographic, clinical and paraclinical data for single or all patients. It can also search and categorize different demographic characteristics and laboratory values and can finally provide different statistical reports, integrating the whole range or various combinations of the above information, which can be readily exported to statistical software.

Conclusions. The first Iranian integrative hemodialysis software will be presented by live demo, showing its different pages and capabilities, relying on the 9-year data of the cumulative 565 hemodialysis patients of Hasheminejad Kidney Center.

O102

Patient Survival and Risk Factors of Mortality in Hemodialysis Patients: 9-Year Report of a Single Center

Ossareh S,[1] Farrokhi F,[2] Malakoutian T,[1] Ataipour Y,[1] Zebarjadi M[1]

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Introduction. Hemodialysis (HD) is one of the main modalities of renal replacement therapies. However, in spite of the improvements in HD techniques, the survival rate of patients on chronic HD is still low, and only slightly better than that of patients with lung cancer. The aim of this study is to evaluate the outcome and predictors of survival in HD patients of Hasheminejad Kidney Center (HKC), where close nephrology care, dialysis dosing schedule and aiming for targeted lab values have been practiced since 2004.

Methods. Demographic and clinical data of 565 patients under dialysis in HKC from March 2004 to October 2013 was extracted from HD Data Processor Software (HDPS). Survival of the dialysis patients were calculated for up to 9 years. To investigate predictors of mortality, a Cox proportional hazard model was built taking into account the comorbidities and laboratory findings as potential risk factors.

Results. A total of 565 prevalent and incident patients were on dialysis in our unit since 2004 (mean age: 56.10 ± 17.14; 57% male). The 1, 3, 5, 7 and 9-year survival rates were 91.8%, 65.8%, 46.2%, 35.3% and 28.2%, respectively. These rates were 90.5%, 61.5%, 43.0%, 26.7% and 26.7% for 392

incident patients starting HD after 2004. Adjusting for demographic and clinical factors, predictors of mortality were low Hemoglobin level (< 10 g/dl; HR, 1.75; 95 CI, 1.23 to 2.50), Diabetes Mellitus (HR, 1.42; 95% CI, 1.04 to 1.95), plasma protein level (HR, 0.59; 95% CI, 0.45 to 0.77), serum Sodium level (HR, 0.92; 95% CI, 0.87 to 0.97), and high-density lipoprotein level (HR, 0.97; 95% CI, 0.95 to 0.99). **Conclusions.** Our patients have comparable survival rate with high-profile dialysis centers. In order to achieve targets of dialysis care in all patients, especially Hemoglobin and plasma protein levels should be considered for optimal dialysis outcomes.

O103

Remote Ischemic Preconditioning for Prevention of Contrast Induced Acute Kidney Injury in Diabetic Patients

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Introduction. Diabetic patients are at risk of Contrast Induced Acute Kidney Injury (CI-AKI) following Coronary Angiography (CA). There are some clinical trials which have shown that short term ischemia in one organ protects different organs against higher intensity and longer ischemic Insult. Considering these points, we arrange a study to assess whether ischemic preconditioning in one organ can decrease the rate CI-AKI in diabetic patients who undergo CA.
Methods. This randomized controlled trial is performed on 96 diabetic patients who are candidates for CA. Exclusion criteria are congestive heart failure and complications during CA. Every patient receives 1000 ml normal saline prior to CA. Study group underwent three cycles of 5 minutes ischemia in their right arm by sphygmomanometer inflation to the point of 200 mmHg after filling informed consent. Serum Creatinine is checked at 0 and 24 hours after CA.
Results. Each group includes 48 patients. There is no significant difference in age, gender, eGFR, contrast dosage, history of myocardial infarction, cerebrovascular accident and hypertension between two groups. Serum Creatinine does not change significantly in study group ($P = 0.3$) but there is a significant increase in control group ($P = 0.04$)

after CA. CI-AKI reported in 5 cases in control group compared to 1 case in study group ($P = 0.24$). **Conclusions.** Ischemic preconditioning had a protective effect on CI-AKI in our study. Since this method is harmless and cost effective, a clinical trial in CKD patients is necessary to add ischemic preconditioning in our clinical practice for prevention of CI-AKI.

O201

Microarray Analysis of MicroRNA Expression in Serum of Patients with Systemic Lupus Erythematosus: Comparison Between Cases With and Without Renal Involvement

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Introduction. MicroRNAs (miRNAs) are small, approximately 20 nucleotides in length, non-coding single strand RNAs. Their ability to regulate gene expression posttranscriptionally by binding to target mRNAs with low specificity leading to inhibition of translation or mRNA degradation is the hallmark of the miRNAs. Systemic Lupus Erythematosus (SLE) is the prototype of human autoimmune diseases. It is a disorder of generalized autoimmunity with unknown etiology, characterized by autoantibody production and immune complex formation that lead to intense inflammation and multiple organ damage. Although the pathogenesis of SLE remains largely unknown, strong evidences are reported that the inappropriate expression of miRNA is associated with pathogenesis of lupus nephritis. This study describes a comparison between the miRNA profile of the lupus patients with healthy controls and SLE patients with renal and non-renal involvement.
Methods. Serum samples were collected from 16 SLE patients (12 renal vs. 8 non-renal) and 8 control subjects. Total RNA was isolated to obtain free miRNAs in the serum on which, microarray analysis was performed.

Results. The miRNA microarray chip analysis identified 9 miRNAs differentially expressed in SLE among which [has-miR-4454] was the most up-regulated one (FC = 6.029, P = 0.00026). When renal and non-renal cases were compared, there were 11 significantly deregulated miRNAs in renal cases with 7 up-regulated and 4 down-regulated. Here [has-miR-4652-3p] was the most up-regulated one (FC = 4.94, P = 0.0134) and in contrast [has-miR-4459] was the most down-regulated one (FC = 6.657, P = 0.0063).

Conclusions. As mentioned above, miRNAs transpire as promising elements in molecular medicine for the identification of new diagnostic, prognostic and targeting therapeutic biomarkers. Although further studies are needed to validate the role of serum miRNAs as biomarkers of SLE, this pilot study suggested that miRNAs may take part in the pathogenesis of SLE patients with renal involvements.

O202

Renal Biopsy Findings in Iran: Update of a Case Series Report from a Referral Kidney Center

Ossareh S, Asgari M, Abdi E, Ataipour Y, Malakoutian T, Saddadi F, Rayatnia M

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Introduction. Several registries and single centers have reported the results of their renal biopsies from different parts of the world. In our previous study, we reported the results of 1407 renal biopsies from Hasheminejad Kidney Center. Here, we report an update of renal biopsy findings from our center with a look at the changes in epidemiology.

Methods. Data from 2626 patients, who had undergone a renal biopsy in our center between 1998 and 2012 and had a definite pathologic diagnosis, were extracted from the renal biopsy database of Hasheminejad Kidney Center. Data included demographic data, renal syndrome at presentation and laboratory findings. All kidney specimens had been studied with light and immunofluorescent microscopies.

Results. Out of 2626 patients, 1466 were male (55.8%). The mean age of patients at presentation was 38 ± 16 years. The most common presenting renal syndrome was Nephrotic Syndrome, defined as porteinuria > 3.0 gr/day, in 1447 patients (55.1%), followed by subnephrotic proteinuria (12.8%) and Nephritic Syndrome (12.3%). 44.5% were hypertensive (blood pressure > = 140/90 or under antihypertensive treatment) and 47.5% were azotemic (serum Creatinine > = 1.4 mg/dl) at presentation. History of collagen vascular disease, nephrotoxic drugs, Diabetes Mellitus, infectious disease, familial disease or malignancy was reported at presentation in 9.3%, 4.4%, 3.8%, 3.4%, 3.3% and 1.5% of patients, respectively. 2062 (78.5%) had a primary glomerular disease, 363 (13.8%) had a secondary glomerular disease, 116 (4.4%) had tubular disease, 66 (2.5%) had vascular disease, and 31 (1.2%) had end-stage kidney disease. The most frequent types of biopsy-proven renal diseases were Membranous Glomerulopathy (MGN) (664 cases, 26.8%), Focal Segmental Glomerulosclerosis (FSGS) (327 patients, 12.5%), IgA Nephropathy (IgAN) (308 patients, 11.7%), lupus nephritis (261 patients, 9.9%), and minimal change disease (210 patients, 8%). The predominant presentation was Nephrotic Syndrome in almost all cases, with the exception of chronic glomerulonephritis, acute tubular necrosis and acute tubulointerstitial nephritis. We could show a rise in percentage of FSGS, climbing to the second rank of prevalence compared to our previous report where it was in the fourth rank.

Conclusions. In our report of 2626 renal biopsy specimens, MGN and FSGS were the most frequent biopsy-proven renal diseases. This is similar to many large series all over the world and interestingly different with some neighboring countries. Lupus nephritis was the most common secondary glomerular disease. The unusually high frequency of presentation as Nephrotic Syndrome may be due to referral nature of our center and less liberal indications for renal biopsy.

O203

Association Between Smoking and Albuminuria: a Case-Control Study

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Introduction. It is proven that cigarette smoking is a risk factor for development and progression of Chronic Kidney Disease (CKD). Since urinary albumin is a sensitive marker of glomerular injury and kidney dysfunction, the aim of this study is to investigate association of smoking and albuminuria in workers of Arak factories.

Methods. This case-control study was conducted on 306 smokers (with at least 6 months of smoking) as the case group and 306 never smoked controls. Study groups were selected from both genders and the age ranged from 18 to 50 years. Blood and a random urine samples were taken to find Blood Urea Nitrogen (BUN), urine and blood Creatinine (Cr), Albumin, Fasting Blood Sugar (FBS) and Glomerular Filtration Rate (GFR). In this study, we excluded cases with hypertension, Diabetes Mellitus (DM) and renal failure. The data was analyzed using independent t-test of groups and x2 in SPSS-18.

Results. All case group participants were men and control group included 303 (99.01%) men and 3 (0.98%) women ($P = 0.2$). There was a significant difference between the average GFR ($P = 0.01$), average Creatinine ($P = 0.001$) and average Alb/Cr ratio ($P = 0.02$) in case and control groups. However, no significant relationship was observed between the number of cigarettes smoked and albuminuria levels in case group ($P = 0.2$).

Conclusions. There is a significant relationship between smoking and albuminuria and consequently CKD. Therefore, it is recommended that healthy individuals and more specifically cases with other risk factors for kidney diseases to be encouraged to give up smoking and being under control in terms of CKD.

O301

Association of Dietary Macronutrient with Glomerular Filtration Rate and Kidney Dysfunction: Tehran Lipid and Glucose Study

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Introduction. The dietary components may play a role in the development of Chronic Kidney Disease (CKD), yet data on this topic are scarce. The objective of this study was to investigate the association between macronutrient intakes and CKD, independent of having hypertension or Diabetes Mellitus (DM) in a large adult population-based study.

Methods. This cross-sectional study was conducted in the framework of Tehran Lipid and Glucose Study on 5, 316 adults (> 27 years) without DM. Dietary intakes were collected using a validated semi-quantitative food-frequency questionnaire. Macronutrients including total protein, animal protein, plant protein, carbohydrate, simple sugar, fructose, total fat, saturated fatty acids, poly and mono unsaturated fatty acids, n3 and n6 fatty acids, all of them categorized in quartiles of intakes. Anthropometric, blood pressure, serum Creatinine, fasting plasma concentrations of glucose and lipids were measured. Estimated Glomerular Filtration Rate (eGFR) was calculated using the Modification of Diet in Renal Disease (MDRD). eGFR < 60 ml/min/1.73 m^2 was defined as CKD. Multiple logistic regression models were used to estimate the prevalence of the CKD in each quartile of macronutrient consumption.

Results. The mean age of participants was 45.0 ± 12.23 years, and mean eGFR was 71.86 ± 11.12 ml/min/1.73 m^2. CKD was seen in 13% of cases. After adjusted for serum triglyceride, serum cholesterol, Body Mass Index (BMI), hypertension, and antihypertensive medications in the highest quartile compared with the first (lowest) quartile of plant protein (OR: 0.70, 95% Confidence interval (CI): 0.51-0.97), Poly-Unsaturated Fatty Acids (PUFAs) (OR:0.73, 95% CI: 0.55-0.99), and n-3 (OR:0.75, 95% CI: 0.57-0.97), the risk of CKD is decreased. However, in the highest quartile of animal protein (OR: 1.37, 95% CI: 1.05-1.79) compared with first (lowest), the risk of CKD is increased.

Conclusions. Plant protein, PUFA, and n-3 fatty acids are associated with a lower prevalence of CKD, independent of hypertension or DM. These data suggest that animal protein may be a risk factor for CDK in adult.

O302

The Supplementary Effect of Spironolactone on Proteinuria in Type-2 Diabetes Mellitus

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Introduction. Proteinuria is a well-defined risk factor for progression of Chronic Kidney Disease (CKD) and cardiovascular disease in diabetic patients. Recent evidence indicates that Aldosterone suppression have additional reno-protective effect in patients with early diabetic nephropathy who experience Aldosterone escape phenomenon due to use of Angiotensin Converting Enzyme Inhibitor (ACE-I). In subtotal nephrectomized rats, mineralocorticoid blockade provided a better reno-protective effect compared with ACE-I, and this effect was paralleled by changes in podocyte number and morphology and was not dependent on blood pressure. Spironolactone prevents the progression of diabetic nephropathy by reduction of Connective Tissue Growth Factor (CTGF) synthesis in type-2 diabetic rats.

Methods. This study is a double-blind randomized clinical trial. Initially, diabetic patients according to inclusion criteria (GFR > 60ml/min, 24 hour urine protein > 300mg) and exclusion criteria [Blood Pressure (BP) $\geq$150/90, serum K > 5mg/dl, Body Mass Index (BMI) > 30, HgA1c $\geq$ 8.5] were selected. All patients have been treated with ACE-I or Angiotensin Receptor Blockers (ARBs) or both for more than one year. The patients randomly divided in two groups (each group 21 patients). Patients were treated with Spironolactone or placebo for 4 months. After one month, serum K checked and at the end of study, Glomerular Filtration Rate (GFR), urine protein, serum Creatinine and BP rechecked. Statistical analyses were performed using SPSS. *P*-values < 0.05 were considered significant.

Results. The mean age of patients was 56.47 ± 11.79 (max = 87, min = 30) and 61.9% of patients were male. Prior to intervention, mean age, BMI, systolic and diastolic BP, HgA1c, urine protein and GFR in case and control groups were not significantly different. Following intervention, the mean BP, GFR, serum K, and urine protein were not significantly different too, but the rate of urine protein changes in group A and B were -26.6% and 17.9%, respectively (*P*-value: 0.003).

Conclusions. Spironolactone has an additional effect on decreasing proteinuria in diabetic patients who receive ACE-I or ARB or both. Moreover, daily 12.5 mg Spironolactone has no harm effects on GFR or serum K.

O303

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

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Introduction. Bacterial growth in the inner layer of catheter as biofilm is common in routine medical care and it may occur in a few days after inserting catheter. Catheter- induced bacteremia is often due to these biofilms. Locking catheter with antimicrobial agents is an effective way for reducing the risk of catheter related infections.

Methods. In a controlled randomized clinical trial, 64 Hemodialysis (HD) patients who met the inclusion criteria were divided in two equal groups (case and control groups with 32 patients, each; A and B). The effect of systemic antibiotic with and without ethanol-locked solution in the treatment of catheter infection was evaluated. The results were matched after 3 weeks of treatment in terms of success or failure of treatment.

Results. Total, there were 32 men and 32 women. The mean age of patients was 57.5 ± 15.6 and they were between 14-82 years old. The effect of 60% ethanol in the treatment of catheter infection between two groups was significant (*P* = 0.002). Success rate in group A (29 patients) and group B (18 patients) were 90.6% and 56.2%, respectively.

Conclusions. Regarding the significant difference in the success rate of catheter infection treatment in HD patients, it is highly advisable to administer 60% ethanol along with antibiotic therapy routinely.

P101

Estimation of Glomerular Filtration Rate with Creatinine-Based Versus Cystatin C-Based Equationsin 2-14 year Children with Kidney Diseases

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Introduction. Accurate measurement of Glomerular Filtration Rate (GFR) and early kidney dysfunction diagnosis are critical in the follow-up of kidney transplant recipients. Therefore, a variety of markers for evaluation of glomerular dysfunction have been proposed. In 2002, the National Kidney Foundation published the Kidney Disease Outcomes Quality Initiative guidelines for the diagnosis and classification of Chronic Kidney Disease (CKD) on the basis of Creatinine-based formulas. Recent studies concluded that Cystatin C-based equations are more accurate in GFR estimation than the Modification of Diet in Renal Disease (MDRD) equations.Cystatin C, which is produced endogenously at a constant rate, is freely filtered in the glomeruli and is completely reabsorbed and catabolized by the proximal renal tubule. To date, numerous Cystatin C-based equations have been designed in different populations to introduce a direct GFR estimation.However, there are some challenges on the accuracy of these equations in kidney diseases yet. We planned a study on renal diseases in order to compare the performance of three Creatinine-based equations with Cystatin C-based equations for GFR measurement.

Methods. We selected 72 patients with kidney diseases such as reflux nephropathy, nephrotic syndrome, renal malformation, obstructive uropathy and hereditary renal disease for this cross-sectional study. They were 38 boys and 34 girls. Our exclusion criteria were hyperthyroidism or hypothyroidism, liver cirrhosis, or administration of any medication interfering with creatinine tubular secretion.Data including age, sex, weight, last serum Creatinine level measured on follow-up visits were collected. Then blood samples were collected for serum Creatinine, Cystatin C, and T4 and TSH measurements. The method for Creatinine measurement was the Jaffe method. Serum Cystatin C levels were analyzed with the Dade- Behrings method using the Behring Nephelometer II. The patients' GFRs were calculated using the Schwartz and 24-hour Creatinine Clearance. Cystatin C-based equations include the Grubb, simple, Hoek, and Larsson equations. The 24-hour urinary Creatinine clearance was the gold standard method. GFR also was measured with Schwartz formula (current method in pediatrics) .Then correlation rates of these Cystatin C-based formulas with the gold standard method and Schwartz formula were determined.

Results. Using Pearson Correlation Coefficient, there was positive correlation among all formulas and the standard method ($R2$ for Schwartz, Hoek, Larsson, Grubb and Simple formula were 0.639, 0.722, 0.705, 0.712, and 0.722, respectively). There was also statistically significant correlation (*P*-value < 0.001). Cystatin C-based formulas could predict the variance of standard method results with high power. On the other hand, these formulas had correlation with Schwarz formula by R 2 0.62-0.65 (intermediate correlation). Also, using Linear Regression and calculating the constant, it revealed that Larsson, Hoek and Grubb formulas can estimate GFR amountswith no statistical difference compared with standard method; however, Schwartz and Simple formulas overestimate GFR.

Conclusions. This study shows that Cystatin C –based formlas have strong relationship with 24-hour urinary Creatinine clearance. So, it seems that using these formulas, it is possible to determine GFR in children with kidney injury, easier and with more accuracy. Thereby the physician will be able to treat the renal disease or prevent its progression in early stages and improves the prognosis. Of course, we must emphasize that on the basis of this study, Schwartz and Simple formulas overestimate GFR.

P102

Frequency and Prognosis of Acute Kidney Injury in Burned Patients

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Introduction. Acute Kidney Injury (AKI) is a complication that occurs frequently in patients

with burn injury. It has been associated with increased mortality, hospital length of stay and healthcare costs in victims. The aim of this study was evaluation of frequency and prognosis of AKI in burned patients.

Methods. In a prospective cohort study in Tabriz University of Medical Sciences, Tabriz, Iran, 100 burned patients, admitted in Intensive Care Unit, were studied. RIFLE score was used for all patients at 24 hour and throughout hospitalization. Finally, mortality rate and other risk factors related to AKI were surveyed. All patients divided in two groups according to AKI and compared with each other.

Results. One hundred burned patients with mean age of 45.2 ± l8.6 year including 61% men and 39% women were studied. Frequency of AKI was 76% and mortality rate was 31%. Frequency of nephrotoxic drugs usage (P = 0.01), percent of burning (P < 0.001), sepsis (P < 0.001) and death (P = 0.004) were significantly higher in patients with AKI than patients without AKI. According to RIFLE classification, frequency of AKI in risk stage was 53%, injury 10%, failure 6% and loss 23%. In loss stage, mortality rate was significantly higher than other stages (P = 0.0 1).

Conclusions. The frequency of AKI is high in burned patients and it is associated with increased mortality rate. With suitable resuscitation and control, we can reduce frequency and severity of AKI in burned patients and finally improve outcome.

P103

Evaluation of Contrast Induced Nephropathy in Patients Undergoing Coronary Angiography

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Introduction. Contrast Induced Nephropathy (CIN) in patients with and without Diabetes Mellitus (DM) is a problem that is often under-diagnosed among patients with normal renal function. The aim of present study was evaluation of CIN in diabetic and nondiabetic patients undergoing Coronary Angiography (CA).

Methods. This cross-sectional and prospective study has performed on patients with normal renal function candidate for diagnostic CA at Imam Hospital, Ahvaz, Iran from October 2010 to February 2011. CIN defined as an increase in serum Creatinine > 0.5 mg/dl after two days of contrast administration. A standardized questionnaire was used to collect demographics, clinical and laboratory data and SPSS (version 15) software was used for data analysis.

Results. A total of 254 patients (140 males and 114 Females with mean age of 56.6 ± 11.9years) were included in the study. Sixty patients (23.6%) had Congestive Heart Failure (CHF) and 57 patients (22.4%) had DM. The mean serum Creatinine levels before contrast administration in men and women were 1.05 ± 0.22 and 0.93 ± 0.17, respectively. Overall, CIN occurred in 27 patients (10.6%) with no difference between men and women (P = 0.386) and in patients with and without CHF (P = 0.766). There was a significant association between CIN and DM (P = 0.001) and mean volume of contrast administration (P = 0.001).

Conclusions. Although contrast induced nephropathy is a common problem in patients with diabetic nephropathy undergoing CA, diabetic patients without diabetic nephropathy and patients without DM and with normal renal function are also at risk.

P104

Relationship Between the Quality of Sleep and Restless Leg Syndrome Among Hemodialysis Patients Admitted to Dialysis Centers in Chaharmahal and Bakhtiari Province

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Introduction. Chronic renal failure and dialysis cause symptoms which can affect the patients' quality of sleep and quality of life. Therefore, this study aimed to determine the relationship between sleep qualities, and quality of life in

Hemodialysis (HD) patients in Chaharmahal and Bakhtiari Province.

Methods. This was a descriptive-analytical study. The study population consisted of HD patients in HD centers of Chaharmahal and Bakhtiari Province. Data were collected using a questionnaire with three sections of demographic questionnaire, the World Health Organization Quality of Life Questionnaire and the Pittsburgh sleep quality questionnaire. Data were analyzed using SPSS software version 15, the Mann-Whitney test, Chi-square test, and independent samples t-test.

Results. The subjects were 171 dialysis patients, of which 95 were male (55.6%) and 76 female (44.4%). The average age of men and women were 59.12 ± 16.48 and 55.55 ± 18.03, respectively. The difference between average age of two genders was not significant ($P = 0.18$). The average duration of dialysis was 36.96 ± 33.03 months. Results showed that none of the HD patients were in the desired quality of life group. Moreover, Chi-square test showed that sleep quality has an impact on quality of life of dialysis patients, and this correlation was statistically significant ($P < 0.05$).

Conclusions. According to the findings of this study, the quality of sleep of HD patients, as one of the most important aspects influencing the quality of life of these patients, requires more attention.

P105

Comparison of N-Acetylcysteine, Ascorbic Acid and Normal Saline Effect on Prevention of Contrast-Induced Nephropathy

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Introduction. Considering the crucial role of appropriate preventative strategies in reducing the rate of Contrast Induced Nephropathy (CIN) occurrence and its related morbidity and mortality, in this prospective randomized controlled trial the effect of N-Acetylcysteine (NAC), Ascorbic Acid (AA) and Saline was evaluated in preventing CIN in patients undergone Coronary Angiography in Hajar Hospital, Shahrekord, Iran.

Methods. In this prospective randomized controlled trial, 120 patients scheduled for elective coronary angiography with baseline Creatinine level of > 1.5mg/dl or GFR ≤ 60 selected by conventional method. Selected patients were allocated in three treatment groups randomly to receive oral NAC (600mg/BID) plus normal saline (100ml/hour) [group A], oral AA (250 mg/BID) plus normal saline (100ml/hour) [group B] and intravenous normal saline (100ml/hour) [group C], respectively. Occurrence of CIN based on mean Creatinine (Cr) and Glomerular Filtration Rate (GFR) in three studied groups, before and after angiography was evaluated and compared.

Results. Mean age of patients in group A, B and C were 67.5 ± 7.5, 67.8 ± 6.8 and 67.6 ± 8.1 ($P = 0.127$), respectively. Serum Cr and GFR at the beginning of study was not different significantly in three groups ($P = 0.661$ for Cr and $P = 0.785$ for GFR), also there is no significant difference between serum Cr and GFR in three patients groups after intervention ($P = 0.771$ for Cr and $P = 0.876$ for GFR).

Conclusions. The study showed that neither the addition of NAC nor the addition of AA to Sodium Chloride infusion have more beneficial effect than hydration with Sodium Chloride in the prevention of CIN. It seems that most effective modality of prevention of CIN is hydration.

P106

Protective Effect of Metformin on Renal Ischemia Reperfusion Induced Apoptosis in Rats

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Introduction. The acute renal failureis one of the most important causes of death throughout the world. This study was undertaken to investigate the protective effects of Metformin on apoptotic cell death of renal tissue during experimental renal Ischemia-Reperfusion in rats.

Methods. Twenty-five male Wistar rats were randomly assigned into 5 groups of 5 animals each, including: 1- Sham I/R, 2- I/R, 3- Low dose Metformin + I/R, 4- Average dose Metformin + I/R and 5- High dose Metformin + I/R. Renal ischemia was induced clamping the left renal artery. After

30 minutes of ischemia, the clamps were taken off and the animals underwent 2-hour reperfusion. Metformin (5, 10 and 20 μg/kg/min) was infused 15 minutes prior to reperfusion through jugular vein in treatment groups. At the end of experiment, the rats were euthanized and histological sections from renal tissue were prepared through Tunnel staining method. Apoptotic cells were counted under light microscope. The data obtained were statistically analyzed using ANOVA. Differences were considered statistically significant at $P < 0.05$.
Results. In group 2, ischemia-reperfusion caused occurrence of apoptotic cell death. There was a significant increase in the incidence rate of apoptosis compared with group 1 ($P < 0.001$). In groups 3- 5 Metformin (5, 10 and 20 μg/kg/min) caused significant decrease in the number of apoptotic cells in comparison with group 2 ($P < 0.05$, $P < 0.01$ & $P < 0.001$, respectively).
Conclusions. This study, therefore, suggests that Metformin may be a useful agent for the prevention of ischemia-reperfusion-induced apoptotic cell death of renal tissue in a dose dependent manner in the rats.

P107

Prevalence of Acute Kidney Injury and Short Time Mortality Rate of ICU Admitted Patients in Shahrekord, Iran

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Introduction. Despite advances in quality of critical cares, Acute Kidney Injury (AKI) is a common and serious complication in critically ill patients. Aim of our study was evaluation of the incidence rate of AKI in medical and surgical Intensive Care Units (ICU). We use the RIFLE Classification (Risk, Injury, Failure, Loss, ESRD), to define the factors that associated with AKI and hospital mortality.
Methods. In a prospective and cross-sectional study, 520 patients, who admitted to the Hajar and Ayatollah Kashani Hospitals' ICU of Shahrekord, Iran, were evaluated based on their files, over a 6 months period and. Six months mortality rate of discharged patients was followed by calling their family. AKI of patients was evaluated according to the RIFLE classification.

Results. AKI occurred in 147 of the 520 patients (28.2%) during their ICU admission, with maximum RIFLE-R (Risk), I (Injury) and F (Failure) in 9.8%, 8.4% and 10%, respectively. The RIFLE class of Injury + Failure had a higher mortality compared to the AKI risk class (51.5% vs. 9.8%). The overall mortality rate of ICU patients was 17.5%. Three and 6-months survival rate of patients with AKI was lower compared with Non-AKI patients ($P = 0.002$).
Conclusions. Based on our results, AKI significantly increases mortality in the critically ill patients. It seems that RIFLE classification is a simple and reliable method for evaluation and define prognosis and mortality rate in ICU admitted patients.

P108

Acute Interstitial Nephritis, Hepatitis, and Hemolysis due to Rifampin

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Introduction. Rifampin is one of the semi-synthetic drugs that is produced from Rifamycin. This drug has many side effects including nephrotoxicity, Acute Kidney Injury (AKI), hepatotoxicity and massive hemolysis.
Methods. The patient is a 71 year old lady that was treated with Rifampin. One week after treatment, the patient had onset fever and chills, weakness, nausea, vomiting, generalized abdominal pain, constipation, jaundice, changed urine color and anuria. In physical examination revealed lethargy, decreased lung sounds, bilateral fine crackles, abdominal distention, positive shifting dullness and 2+ lower extremities edema and generalized icter. The liver and renal tests were impaired. Immunological and virological tests were normal, inflammatory symptoms were increased and Cell Blood Count was impaired. Jugular access was prepared for hemodialysis. The patient was hemodialyzed and packed cell infused. The laboratory tests returned to normal ranges and general condition was improved.
Results. In this study, we describe a patient who after using Rifampin suffered from nephrotoxicity, hepatotoxicity and hemolysis. Several isolated cases of Acute Renal Failure (ARF) following Rifampin therapy have been reported. Various mechanisms

of Rifampicin-associated ARF have been postulated and it is difficult to determine the incidence of ARF among all patients treated with Rifampicin. The mechanism of renal damage is thought to be due to allergic reactions to Rifampicin or one of its metabolites causing allergic interstitial nephritis. Biopsy proved allergic interstitial nephritis with tubular necrosis, and in immuno- fluoreconce study «Local Mesangial IgM deposit» was reported. The management of drug-induced Acute Interstitial Nephritis (AIN) includes immediate discontinuation of causing agent and use of corticosteroids. But in these cases, corticostroids are not indicated.

Conclusions. Rifampin can cause simultaneously AIN, hepatitis and hemolysis which immediate drug discontinuation can reverse the condition to normal status.

P109

The Preventive Effect of Pentoxifylline on Contrast-Induced Nephropathy

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Introduction. Percutaneous Coronary Intervention (PCI) provides a high-risk condition for incidence of Contrast Induced Nephropathy (CIN) even in patients with normal renal function. Pentoxifylline (PTX) with a variety of mechanisms may prevent CIN.

Methods. Between April 5, 2011, and February 20, 2012, all consecutive eligible patients referred for elective PCI were asked to participate in the study (n = 199). Eligibility was defined as the age between 18 and 65 years and baseline serum Creatinine < = 132.6 ulmol/l (1.5 mg/dl). The patients were randomly allocated to two groups either receiving saline or saline plus PTX 400 mg orally three times daily for 48 hours. Serum Creatinine was measured 24 hour prior to the procedure and 48 hour thereafter. The primary endpoint was occurrence of CIN, defined as 25% rise in serum Creatinine 48 hour after the procedure.

Results. The overall incidence of CIN was 6%in this study (6.2% in the PTX group vs. 5.9% in hydration group, P = 0.92). Absolute rise in serum Creatinine was not significantly different between two groups too (P = 0.97). In hypertensive patients; however, the incidence of CIN was lower among those receiving PTX (5% in the PTX group vs. 8.7% in the hydration group). Nevertheless, this difference was not statistically significant (P = 0.68).

Conclusions. Short-term prophylaxis with PTX added to optimal hydration does not seem to reduce the risk of CIN in patients with normal renal function undergoing PCI. Further clinical trials in patients with renal impairment are warranted to define its role.

P110

Urinary Prognostic Biomarkers and Classification of IgA Nephropathy by High Resolution Mass Spectrometry

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Introduction. IgA nephropathy is the most common cause of primary glomerulonephritis. In spite of multiple classification and different pathologic scoring systems that have been developed over decades, there is no consensus classification method among nephrologists yet. The aim of this study was to introduce a non-invasive method for classification of IgA nephropathy by proteomic tools as well as finding novel prognostic biomarkers, important pathways and regulatory proteins involved in pathogenesis of the disease.

Methods. Thirteen urine samples of patients with IgA nephropathy were proved by biopsy and analyzed via two proteomics approaches: nanoflow

LC-MS/MS and GeLC-MS/MS. The results of label-free quantification from two proteomics methods were analyzed by multivariate statistical analysis. **Results.** Multivariate analysis of results obtained from both proteomics methods could classify patients into two groups: primary and advanced stages which correlated well with endocapillary hypercellularity score of the Oxford's classification. Eleven differentially excreted candidate proteins were found as potential prognostic biomarkers: afamin, leucine-rich alpha-2-glycoprotein, Ceruloplasmin (under-represented), alpha-1-microgolbulin, hemopexin, apolipoprotein A-I, Complement C3, Vitamin D-binding protein, beta-2-microglobulin, retinol-binding protein 4 (over-represented). Pathway analysis revealed impairment of Extra Cellular Matrix (ECM)-Receptor Interaction pathways as well as activation of complement and coagulation pathway as important pathways in pathogenesis and progression of IgA nephropathy. **Conclusions.** Urine proteomics is an informative and non-invasive method for determining the severity of IgA nephropathy. Since the disease classification based on the invasive kidney biopsy does not always correctly provide prognosis, proteomic can be a helpful novel strategy parallel to the traditional diagnostic approaches.

mostly by kidney biopsy. Since there is currently no diagnostic test that can accurately predict steroid responsiveness in FSGS, prediction of the responsiveness of patients to steroid therapy with non-invasive means has become a critical issue. **Methods.** We analyzed urinary proteome of 10 patients (n = 6 steroid-sensitive, n = 4 steroid-resistant) with FSGS using nano-LC-MS/MS technique (with LTQ-orbitrap) and supervised multivariate statistical analysis. **Results.** Seventeen proteins were identified as discriminating proteins, among them CP089 and DMKN had the most drastic fold changes and under-represented and over-represented, respectively, in responders than non-responders. Further gene ontology enrichment and regulator analysis revealed three biological processes (acute inflammatory response, regulation of lipid metabolic process and acute-phase response), and 2 key regulatory molecules NICD1 and MRP14 as regulators with highest score that are important in predicting disease responsiveness. **Conclusions.** We introduced novel biomarkers and also key molecules using high-resolution proteomics tools, which may serve as a non-invasive predictor of responsiveness in FSGS; however, further validation would be essential.

P111

Predictive Urinary Biomarkers for Steroid-Resistant and Steroid-Sensitive Focal Segmental Glomerulosclerosis Using High Resolution Mass Spectrometry and Multivariate Statistical Analysis

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Introduction. Focal Segmental Glomerulosclerosis (FSGS) is a glomerular scarring disease diagnosed

P112

Effect of Prednisolone on Linear Growth in Children with Nephrotic Syndrome

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Introduction. Long term use of Prednisolone (PDN) is known to impair growth. The aim of this study was to determine the relation between cumulative dosage of PDN and the linear growth in children < 10year with Nephrotic Syndrome (NS). **Methods.** In a cross-sectional study (April 2010-2012), all children with NS who referred to pediatric nephrology clinic were allocated. Inclusion criteria: age < 10 yr., > 6month duration of treatment and the minimum cumulative dosage of 152mg/kg

for PDN. They were excluded if they had entered puberty, or had other diseases affecting linear growth such as hypothyroidism and celiac disease. Based on the PDN cumulative dosage of $\geq$ 550 mg/kg (equal to ≥ 4 relapses), the children were divided into two groups. All data regarding age, height and weight at disease onset and the last visit, bone age, and parents' height were collected and secondary variables mid-parental target height and predicted adult height were calculated. Data were compared between the different rates of relapses. **Results.** A total of 99 children (67.7% males) were enrolled. Twenty-eight had ≥ 4 relapses. In children with ≥ 4 relapses, current heights Z-score were significantly ($P = 0.018$) lower than pretreatment values, particularly in boys ($P = 0.032$). With the higher cumulative doses, Predicted height Z-score was more decreased compare to target mid-parental height Z-score but it was not significant ($P = 0.11$). Decrease of current Z-score was more in patients who needed other immunosuppressive drugs ($P = 0.047$), and this decrement was more significant in the group with more than 4 relapses ($P = 0.03$). In those with < 4 relapses the cumulative dosage of PDN did not have any significant correlation with outcome measures. Deterioration of the mean Z-score had no meaningful relation with the type of NS, history of allergy, family history of renal disease, parental consanguinity and the presence of hypertension.
Conclusions. The results of this study have shown the negative effect of the cumulative dosages of PDN (more than 550 mg/kg) on the linear growth. This effect was more in children who developed ≥ 4 relapses.

P113

Which Serum Cytokines Are Elevated in Lupus Nephritis?

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Introduction. Despite the abundance of research and the plethora of reports regarding the role of cytokine imbalance in the pathogenesis of Systemic Lupus Erythematosus (SLE), there is very little information on exact cytokine signature associated with lupus nephritis. Cytokines and their receptors have been known to be encoded by highly polymorphic genes. This polymorphism may be responsible for observed inter-individual differences in cytokine production and may be one possible mechanism for the pathogenesis of SLE and lupus nephropathy. This study was carried out in 20 lupus patients to compare the serum cytokine levels between those with lupus nephropathy and those without renal involvement.
Methods. Serum samples were collected from 20 lupus patients; 12 with lupus nephritis and 8 without renal involvement. All serum samples were assayed for IL-1β, IL-2, IL-4, IL-5, IL6, IL-7, IL-8, IL-10, IL-12 (p70), IL-13, IL-17, G-CSF, GM-CSF, IFN-γ, MCP-1, MIP-1β, TNF-α using Multiplex ELISA assay (BioRad).
Results. Increased levels of IL-4 (17.3 vs 6.4), IL-8 (10.4 vs 7.6), IL-13 (9.6 vs 4.6), IFN-γ (20.1 vs 5.2), MCP-1 (7.8 vs 4.8) and MIP-1β (11.6 vs 6.5) were found in almost all patients with lupus nephritis while no significant changes were detected in cases without renal involvement.
Conclusions. Increased serum levels of some cytokines in patients with lupus nephritis may provide a clue that these cytokines play a pathogenetic role in development of lupus nephritis.

P114

Evaluation of Urinary Lipocalin-II Relation with Glomerular and Tubulointerstitial Injury in Renal Pathology of Patients with Nephrotic Syndrome

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Introduction. Nephrotic syndrome (NS) is one of the most common syndromes in nephrology and regarding to its prevalence, the diagnosis and early treatment and determining the prognosis of patients

is so important.The goal of this study is to find an easier and less invasive way than kidney biopsy for determining the degrees of kidney injuries.

Methods. We requested a 24 hour urine sample for all 44 patients who suffered from primary NS which has been confirmed by kidney biopsy and urine analysis.We evaluated Lipocalin-II/Cr and the rest of ordinary evaluations in urinalysis such as Creatinin and protein. Then we processed the data with SPSS and analysed the results.

Results. There was no relationship between the sex, age and weight of patients and the level of lipocalin-II/Creatinine ($P = 0.326$). We found a relationship between the kind of NS and level of lipocalin-II/Cr ($P = 0.oo 1$). We discovered a direct relationship between the tubulointerstitial injuries and glomerular sclerosis and level of lipocalin-II/Cr in urine analysis ($P = 0.000$).

Conclusions. Measuring the Lipocalin-II in the urine of patients who suffer from NS is valuable for determining the degree of tubular and interstitial kidney injuries and also for glumerolar sclerosis. The more damage to the kidney, the more levels of lipocalin-II in the urine exist.

P115

The Novel Diagnostic Biomarkers for Focal Segmental Glomerulosclerosis

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Introduction. Focal Segmental Glomerulosclerosis (FSGS) is a progressive glomerular injury characterized by sclerosis and fibrosis and is only diagnosed by invasive histopathological studies. Various pathogenic mechanisms play role in FSGS including podocyte cytoskeletone derangements, inflammation and fibrosis. Urine proteome panel might help in non-invasive diagnosis and better understanding of pathogenesis of FSGS.

Methods. In the current study, we have analyzed the second mid-stream urine sample of 11 biopsy-proven FSGS subjects, 8 healthy controls and 6 patients with biopsy-proven IgA nephropathy as disease controls by means of liquid chromatography tandem mass spectrometry (nLC-MS/MS). Multivariate analysis of quantified label-free proteins was performed by Principal Component Analysis (PCA) and Partial Least Squares (PLS).

Results. A total number of 389 unique proteins were quantified by nLC-MS/MS, of which after multivariate analysis and additional filter criterion and comparing FSGS vs. nephropathy and healthy subjects, 77 proteins were considered as putative biomarkers of FSGS.

Some of the most significant differentially expressed proteins were: CD59, CD44, IBP7, Robo-4, and DPEP1. These proteins are related to various involved pathogenic pathways: complement pathway, sclerosis, cell proliferation, actin cytoskeleton remodeling, and activity of TRPC6. There was complete absence of DPEP1 in urine proteome of FSGS subjects compared with healthy and disease controls. DPEP1 acts via leukotrienes (LTC4 and LTD4) on podocyte calcium channel (TRPC6) and results in increased podocyte motility.

Conclusions. The obtained results suggest a panel of biomarkers for non-invasive diagnosis of FSGS, while complete absence of DPEP1 represents a novel marker of FSGS. This defect leads to increased filopodia and podocyte motility. The lysosomal pathway and the complement pathway apart from cytoskeletal system, were shown be involved in the pathogenesis of FSGS. Further studies would help to confirm these findings and their utility in clinical practice.

P116

Relationship Between Anemia and Peak Oxygen Uptake in Hemodialysis Patients Waiting Renal Transplantation

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Introduction. End Stage Renal Disease (ESRD) is a major public health problem. The measurement

of exercise capacity through Peak Oxygen Uptake is an important factor in predicting mortality and survival in patients after transplantation. Because oxygen is carried by Hemoglobin (Hb), VO2 max can be influenced by this factor.

Methods. In this study, 31 renal transplant candidates aged 17 to 58 years were evaluated through spirometery and Exercise test and results were recorded according to the assumed inclusion criteria including age, Hb and hematocrite and the results were analyzed through statistical and analytical measures. Out of 31 patients, there was 5 women and 26 men, that the average Hb was 12 ± 1 (maximum 13.5 and minimum 10.6) and 11.8 ± 2 (maximum 15.6 and minimum 7.4), respectively. According to the degree of anemia, patients were divided into three categories; Mild anemia (Hb 6 to 9), moderate anemia (Hb 9 to 12), and normal (Hb 12 and more).

Results. We found that despite approximately equal average in men and women, the range of Hb was significantly more in men than women (8.2 vs. 2.5). The hematocrite range had such pattern as well. 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 Hb and hematocrite and VO2 max, and the P-value were 0.015 and 0.005, respectively.

Conclusions. In renal transplant patients decreased Hb and hematocrit can be the sole predisposing factor for decreased exercise capacity and anemia may decrease VO2 max by reducing oxygen carrying capacity of skeletal muscles. Considering this relation between Hb and VO2 max, we can help patients with effort to correct this factor leading to more survival and less mortality in patients with ESRD expecting renal transplantation.

P117

The Evaluation of Relationship Between Vitamin D and Muscle Power by Micro Manual Muscle Tester in End Stage Renal Disease Patients

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Introduction. Muscle force of lower limbs is a major factor for physical activity. Decreased muscle force is a major cause for limitation of physical activity, which increases mortality and morbidity in End Stage Renal Disease (ESRD) patients. One of the most important factors that affect muscle function in both uremic and non-uremic patients is 25-hydroxy vitamin D (25-OHD). The aim of this study was to investigate the association between serum level of 25-OHD and muscle force of lower extremities by Micro Manual Muscle Tester (MMMT) in Hemodialysis (HD) patients.

Methods. In this cross-sectional study, 135 adult patients undergoing HD were included. Standard biochemistry parameters were measured before HD (such as25-OHD, parathyroid hormone and etc.). Muscle force of lower extremities was measured by MMMT (A digital instrument that measures muscle force in kilograms).

Results. In this study, we examined 69 male (51%) and 66 female (69%). Based on the result of serum level of 25-OHD, patients were classified into three following groups: 85 patients (63%) were 25-OHD deficient (25-OHD < 30), 43 patients (32%) had normal level of 25-OHD (30-70) and 7 patients (5%) had toxic level of 25-OHD (> 70) (mean: 1.42, SD: 0.59). Also based on the result of muscle force, patients were classified into three following groups: 84patients (62%) had weak muscle force (< 5 kg), 46 patients (34%) had normal muscle force (5-10 kg) and 3 patients (21%) had strong muscle force (> 10 kg) (mean: 1.39, SD: 0.53). There was significant relation between 25-OHD level and muscle force (p: 0.02), age and muscle force (p: 0.002), gender and muscle force ($P < 0.001$).

Conclusions. Muscle force of lower extremities had decreased in our patients. There was significant relation between serum level of 25-OHD and muscle force .Therefore 25-OHD can be a useful drug in ESRD patients to improve muscle force and physical activity.

P118

Evaluation of Correlation of Common Carotid Artery Intima Media Thickness with Retinopathy in Type 2 Diabetic Patients

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Introduction. Diabetes Mellitus (DM) is one of the most common causes of blindness in many countries. Diabetic patients are 25 times more likely to become legally blind than others. Blindness is primarily the result of progressive diabetic retinopathy and clinically significant macular edema. The aim of this study was to evaluate the relationship between diabetic retinopathy and Intima Media Thickness (IMT) of common carotid artery in type 2 diabetic patients in Shahrekord, Iran.

Methods. It was a cross-sectional study, which included 154 participants (77 with diabetic retinopathy and 77 without diabetic retinopathy). After the evaluation of retinopathy by ophthalmologist, IMT of common carotid artery was measured by sonography and data were analyzed by using SPSS-16.

Results. There was no significant difference between two groups of the patients based on age and gender. Proteinuria in patients with and without retinopathy were 437.72 ± 668.89 mg/day and 195.08 ± 303.53 mg/day, respectively (P = 0.001). IMT in patients with diabetic retinopathy was 0.95 ± 0.18 and in patients without diabetic retinopathy was 0.73 ± 0.11 (P < 0.001).

Conclusions. There was a significant relationship between IMT and retinopathy, so common carotid artery IMT may be used as a non-invasive screening test for progression of microvascular complication in type 2 diabetic patients.

P119

Correlation of Diabetic Dermopathy with Nephropathy and Retinopathy in Type 2 Diabetic Patients

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Introduction. Diabetic dermopathy is the most common cutaneous manifestation of Diabetes Mellitus (DM) presenting as a single or multiple well-demarcated, brown, atrophic macules, predominantly on shins. Although diabetic dermopathy, nephropathy and retinopathy are considered by some authors as manifestations of diabetic microangiopathy, there are only few reports in the literature regarding their possible association. The purpose of this study was to investigate the association between diabetic dermopathy with diabetic nephropathy and retinopathy.

Methods. In a cross sectional study, 102 type 2 diabetic patients with dermopathy enrolled. The patients were visited by endocrinologist, ophthalmologist and nephrologist and 24-hour urine protein were checked in all patients. Data were analyzed by using SPSS-16 software.

Results. The mean age of diabetic patients was 60.2 ± 8.83 which concluded 64 (62.7%) women and 38 (37.3%) men. The prevalence of diabetic retinopathy and nephropathy was 31.4% (n = 32) and 33.3% (n = 34), respectively. There was statistically significant association between diabetic dermopathy and nephropathy (P = 0.001), retinopathy (P < 0.0001), age (P < 0.0001), duration of diabetes (P = 0.001) and glycosylated hemoglobin (HbA1C) [P = 0.008].

Conclusions. The study supports this hypothesis that diabetic dermopathy may be used as a clinical predictor of an increased likelihood of development of nephropathy and retinopathy in diabetic patients.

P120

Evaluation of G894T Nitric Oxide Synthase Gene (eNOS) Polymorphism Prevalence in Patients with Diabetic Nephropathy and Its Relationship with Proteinuria

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Introduction. Endothelial Nitric Oxide Synthase gene (eNOS) polymorphism may have a role in the production or progression of diabetic nephropathy. There are a few studies about this gene polymorphism and severity of nephropathy, so the aim of this study was evaluation of prevalence of eNOS G894T polymorphism compared with normal cases and its relationship with severity of proteinuria in type 2 diabetic patients.

Methods. In a prospective, cross-sectional study, 100 patients with diabetic nephropathy, who were treated with Angiotensin Converting Enzyme Inhibitor (ACE-I) or Angiotensin Receptor Blockers

(ARBs), and 100 healthy controls were enrolled. Demographic and laboratory parameters were recorded. DNA was extracted from blood samples and were analysed by PCR and PCR-RFLP and then the fragments were separated by electrophoresis to determine the eNOS G894T polymorphisms. Six patients were excluded due to non-cooperation and statistical analysis was performed on 94 patients and with SPSS software.

Results. Most common genotype in two groups was TT allele. There was a significant difference between prevalence of GG genotype in diabetes patients and normal subjects ($P = 0.04$). There was not any correlation between prevalence of TT and GG genotype and FBS, 2 hours post prandial glucose and 24-hour urine protein ($P > 0.05$).

Conclusions. GG allele of eNOS gene may have at least a role in initiation of diabetes mellitus. It seems that eNOS gene polymorphism has no correlation with diabetic nephropathy or response to renoprotective treatment.

P121

Correlation of 25-Hydroxy Vitamin D Serum Level and Parathyroid Hormone with Ambulatory Blood Pressure in Patients with Chronic Kidney Disease Stages 3 and 4

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Introduction. Chronic Kidney Disease (CKD) is highly prevalent in the world. In CKD patients, vitamin D deficiency is common. Correlation of 25-hydroxy vitamin D level with blood pressure has not yet been studied. The goal of this study was to determine the association of serum vitamin D level and Parathyroid Hormone (PTH) with ambulatory blood pressure in CKD patients.

Methods. In this cross-sectional study sixty CKD patients (stages 3 and 4) were evaluated. Glomerular Filtration Rate (GFR)was measured with CKD-EPI method. Ambulatory as well as office blood pressure along with serum level of PTH, 25-hydroxy vitamin-D were measured.

Results. Mean age of patients was 49.45 ± 11.77 years (ranges 21-59 years). Mean level of 25-hydroxy vitamin D was 13.87 ± 17.02 ng/ml and vitamin D deficiency was diagnosed in 73.3%of all patients. Mean office blood pressure was 160 ± 8.2 mmhg systolic and 91.5 ± 7.9 mmhg diastolic. Ambulatory values were systolic 149.7 ± 23, 153.2 ± 23, 142.5 ± 82 and diastolic 87.7 ± 14, 90.4 ± 14.7, 82.5 ± 15.8 mmhg for all day, awakening and sleeping periods, respectively. There was a significant correlation between vitamin D level and diastolic blood pressure in office but no correlation was found between ambulatory indices and 25-hydroxy vitamin D serum level ($P < 0.05$). A significant correlation was found between serum PTH level (111.2 ± 157 pg/ml) and all ambulatory blood pressure values during awakening periods.

Conclusions. The results of this study indicate that vitamin D deficiency is highly prevalent in CKD patients. Vitamin D and PTH could have a role in the pathophysiology of hypertension in CKD patients.

P122

Relationship Between Quality of Sleep and Quality of Life in Dialysis Patients of Dialysis Centers in Chaharmahal and Bakhtiari Province, Iran; 2011

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Introduction. Chronic renal failure and dialysis causes symptoms which can affect the patient's quality of sleep and quality of life. Therefore, this study aimed to determine the relationship between sleep qualities, and quality of life in hemodialysis patients in Chaharmahal and Bakhtiari Province.

Methods. This was a descriptive-analytical study. The study population consisted of dialysis patients who were referring to dialysis centers of Chaharmahal and Bakhtiari province. Data was collected using questionnaire with three sections of demographic questionnaire, the World Health Organization Quality of Life Questionnaire and the Pittsburgh sleep quality questionnaire. Data were analyzed using SPSS software-15, the Mann-

Whitney test, Chi-square test, and independent samples t-test.

Results. The subjects were 171 dialysis patients, of which 95 were male (55.6%) and 76 female (44.4%). The mean age of men and women was 59.12 ± 16.48 and 55.55 ± 18.03, respectively. The difference between the mean age of two genders was not significant (P = 0.18). The average duration of dialysis was 36.96 ± 33.03 months. Results showed that none of dialysis patients were in the desired quality of life group. Moreover, Chi-square test showed that sleep quality has an impact on quality of life of dialysis patients, and this correlation was statistically significant (P < 0.05).

Conclusions. According to the findings of this study, the quality of sleep of hemodialysis patients, as one of the most important aspects influencing the quality of life of these patients, requires more attention.

P123

The Prevalence of Chronic Kidney Disease and Its Relationship with Some Risk Factors in 20 to 60 Years old Persons in Gonabad City (North-East of Iran)

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Introduction. Chronic Kidney Disease (CKD) is one of the most important health problems with increasing prevalence worldwide. Knowledge about the prevalence of this disease in various parts and investigating the relationship between that and clinical and paraclinical data can help in planning to control this condition.

Methods. In this study 1285 individuals of 20 to 60 years old who live in Gonabad in all three parts of this city were selected via simple random sampling. Blood Urea Nitrogen (BUN), Creatinine (Cr), Uric Acid, Fasting Blood Sugar (FBS), Cholestrol (LDL, HDL, total) and urinalysis were performed. Demographic data were also collected, height and weight were measured and Body Mass Index (BMI) was calculated. Glomerular Filtration Rate (GFR) was estimated via simplified Modification of Diet in Renal Disease (MDRD) equation.

Results. Sixty-five persons (5.1%) had CKD. The number of males with of CKD was 27 (5.1%) and the number of females with CKD was 38 (5%).The difference was not significant (P-value = 0.909). Elevated blood pressure (both systolic and diastolic), history of diabetes, history of hypertension, older age and presence of proteinuria were significantly related to CKD, whereas the history of Urinary Tract Infection (UTI), nephrolithiasis, job, smoking and blood uric acid, cholesterol, triglyceride and FBS were not related to the presence of CKD in this population.

Conclusions. CKD has a high prevalence rate in this part of Iran. We suggest further studies in other parts of our country for the better estimation of the prevalence of CKD in Iran and for better planning for its control.

P124

Randomized and Double Blind Clinical Trial of Safety and Antiurolithic Efficacy of Lapis Judaicus which Used in Iranian Traditional Medicine

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Introduction. Kidney stones are one of the most common disorders of urinary tract. It causes a great deal of morbidity and economic loss. Due to side effects and costs, researchers are interested to find a therapy for this disorder. In this regard, some researches focused on traditional medications. Iranian scholars in medieval era recommended Lapis Judaicus for preventing and treatment of kidney stones. The present study was designed to assess the efficacy and safety of Lapis Judaicus on the size of calcium kidney stones and some related blood and urine factors.

Methods. Sixty kidney stone disease patients were included in this double blind randomized clinical study. Thirty patients received 2 g of Lapis Judaicus capsule per day for 10 weeks and other 30 patients received placebo for the same period. Ultrasonography, blood and urine samples were collected before and after the study period to evaluate the efficacy and safety of Lapis Judaicus in calcium kidney stone patients.

Results. The size of kidney stones reduced significantly ($P < 0.001$) in drug group. In 9 patients from drug group, stones completely dissolved. Moreover, urine calcium concentration and specific gravity were reduced and urine magnesium increased ($P < 0.05$). Lapis Judaicus did not affect Blood Urea Nitrogen (BUN), creatinine, ALT, AST. In placebo group, stone size increased significantly but urinary and blood parameters did not change.

Conclusions. Countercurrent to placebo group, the size of kidney stones were reduced significantly in drug group after orally use of Lapis Judaicus. A further study involving larger population of patients will be necessary to confirm the evidence seen in the present clinical study.

P125

Relationship of Serum Testosterone Levels with Hemoglubin and High Sensitive CRP in Patients with Chronic Kidney Disease

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Introduction. There is strong clinical and experimental data that testosterone stimulates erythropoiesis. Inflammation, on the other hand, significantly impacts on haemopoiesis, partly through its suppression of erythropoietin and partly through its direct action on erythropoiesis. Therefore in this study we evaluated correlation of serum testosterone levels with Hemoglobin (Hb) and high sensitive CRP (hs-CRP) in patients with Chronic Kidney Disease (CKD) (in third and fourth stages and hemodialysis patients).

Methods. Twenty-nine patients with CKD in third and fourth stages (group1) and 29 hemodialysis patients (group2) were included in this study. Serum hs-CRP, Hb, total and free testosterone, LH, FSH and erythropoietin levels were measured. Pearson`s correlation analysis was used for determining correlation between variables.

Results. The mean of serum hs-CRP level was significantly lower in group1 than group2, while serum FSH was significantly higher in group1. Pearson`s correlation analysis showed a significant positive correlation between hs-CRP and LH in total patients in two groups and patients in group2. In comparison among 4 groups including group1and 2 with (Hgb ≤ 11 gr/dl) and without anemia (Hgb ≤ 11 gr/dl), there was a significant positive correlation between hs-CRP with LH and an inverse correlation between hs-CRP with total testosterone only in anemic patients in group1.

Conclusions. The significant inverse correlation between hs-CRP and total testosterone in hemodialysis patients with Hb lower than 11gr/dl suggests that this association may also partly contribute to anemia in hemodialysis patients compared with CKD patients in third and fourth stages.

P126

Relationship Between 25-Hydroxy Vitamin D with Hemoglobin and Erythropoietin Index in Hemodialysis Patients

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Introduction. Recent studies have shown that vitamine D stimulates erythropoiesis. The aim of this study was to evaluate relation of 25-Hydroxy Vitamin D (25-OH Vit D) with Hemoglobin (Hb) and Erythropoietin Index (EPOI) in Hemodialysis (HD) patients.

Methods. Our study enrolled 62 HD patients treated at Imam Reza Hospital in year2012. Sixty-two patients including 36 men and 26women, on dialysis treatment enrolled in this cross-sectional study.

Blood samples were obtained for determination of 25-OH Vit D and Hb. EPOI was computed based on weekly EPO dose/hematocritratio .We considered resistance to EPO as EPOI > 300. Pearson's correlation coefficient method was used for specifying the correlation between variable levels.

Results. The mean age of patients was 42.26 ± 13.28 years. The mean Vit D levels were 26.54 ± 20.28. Twenty-four patients (38.7%) had resistance to EPO. In this study, we did notfind any correlation between 25-OH Vit D with Hb and EPOI. In patients with EPOI > 300, there was an inverse significant correlation between 25-OH Vit D and EPOI ($r = -0.42$, $P = 0.04$).

Conclusions. In spite of absence of correlation between EPOI and 25-OH Vit D levels in our study, in HD patients who show resistance to EPO, it might be an inverse significant correlation between 25-OH Vit D and EPOI that should be approved in further studies.

P127

Evaluation of Correlation of High Sensitive CRP with Bioelectrical Impedance Parameters in Patients Undergoing Hemodialysis

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Introduction. In this study, we evaluated relationship between high sensitive CRP (hs-CRP) with bioelectrical impedance parameters in patients undergoing Hemodialysis (HD).

Methods. This study was conducted on 38 patients undergoing HD since September 2012. Bioelectrical impedance parameters including total body fat, free fat body, Total Body Water (TBW), Intra and Extra Cellular Water (ICW and ECW), ECW/ICW and Phase Angle (PA) were measured. Serum hs-CRP was measured and Body Mass Index (BMI) was computed. Pearson`s correlation analysis was used for determining correlation between variables.

Results. A total of 38 patients (23 males and 15 females) with mean age of 48.58 ± 16 years were included in this study. The mean length of HD treatment was 46.34 ± 48.33 months. There was no correlation between hs-CRP with TBW, ICW, ECW and ECW/ICW and PA. There was a significant positive correlation between hs-CRP with total body fat and an inverse correlation with free fat body. We also observed a significant positive correlation between hs-CRP with BMI.

Conclusions. The results showed a significant positive correlation between hs-CRP with total body fat and an inverse correlation with free fat body in patients undergoing HD which shows the probable role of increasing of body weight and total body fat on inflammation process in HD patients.

P128

Comparison of Efficacy of Two Therapeutic Regimens for Primary Nocturnal Enuresis, Oxybutinin Plus Desmopressin in Pediatrics

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Introduction. Enuresis is one of the most prevalent childhood developmental problems that usually follow a familial background. It has abenign course which resolves gradually with increasing age.

Methods. Fifty-nine patients between 5 and 14 years of age, with diagnosis of primary nocturnal enuresis were studied from March 2012 to February 2013. Sampling was done in pediatric nephrology clinic of Tabriz Children Hospital by convenience method according to inclusive and exclusive criteria. The patients were randomly divided into two groups, the first group was treated with a combination of Desmopressin and Oxybutynin and the second group was treated with Desmopressin. Patients' demographic data and their response to treatment were observed and recorded during the last 3 months of study. SPSS (Chi-square) was used for statistical analysis of results.

Results. The mean age of the study population was 6.8 (+/- 2.5) years. In Desmopressin and

Oxybutynin group, 25 out of 30 patients had complete remission (83.34%) after one month, but after three months, 26 patients (86.7%) had full recovery. In Desmopressin group, 21 out of 29 patients had complete remission after one month, but after three months, 26 patients had full recovery. Combination therapy group showed a significantly higher efficacy for both one- and three- month periods of treatment ($P = 0.047$, $P < 0.001$).

Conclusions. Our findings highlight that Oxybutinin plus Desmopressin may play an important role for a subset of children with enuresis and that combination therapy could be a pereferable treatment for primary nocturnal enuresis.

P129

Effect of Pentoxifylline on Microalbuminuria in Diabetic Patients

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Introduction. Microalbuminuria is an early sign of diabetic nephropathy. Pentoxifylline is a non-selective phosphodiestrase inhibitor that has been shown to be beneficial in some nephropathies by reducing proteinuria. The object of this study is to evaluate the effect of Pentoxifylline on microalbuminuria in diabetic patients.

Methods. Forty diabetic patients were enrolled in prospective clinical trial in 2012 and 2013. Weight, height, serum creatinine, Glomerular Filtration Rate (GFR), based on the Modification of Diet in Renal Disease formula (MDRD), and albumin/creatinin ratio of spot urine were measured. Patients were randomly divided into two groups of intervention and control. In the intervention group besides the patients' regular medications, 400 mg Pentoxifylline were administered three times daily, while in the control group, placebo was used similarly. Three and six months later, the participants' albumin/creatinin ratio of spot urine, serum creatinin level and GFR were measured and compared.

Results. Mean age of patients were 53.25 ± 10.23 years (range 33-80). 62.5% of participants were male (25 people). At baseline, mean of ACR was 65.20 ± 49.09 mg/g cr, GFR was 72.86 ± 9.95 ml/min/1.73m², and Serum creatinine level was 0.97 ± 0.14 mg/dl. There was no significant difference in ACR between two groups, neither before the study nor after 3 and 6 months of study (P-values were 0.3, 0.09 and 0.56, respectively). Urine creatinine levels were also not significantly different in the same time periods. (P-values were 0.38, 0.16 and 0.77, respectively). Also there was no significant relationship between the duration of diabetes and 6-month response to treatment, using Pearson correlation coefficient. We found a significant reverse correlation between the severity of microalbuminuria and level of 3-month response to treatment; however, there was no significant relationship between microalbuminuria severity and the 6-month response to treatment.

Conclusions. Pentoxifylline does not have any effects on the microalbuminuria in diabetic patients.

P130

Predisposing Factors of Permanent Renal Scaring in Children with Acute Pyelonephritis

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Introduction. Urinary Tract Infection (UTI) is one of the most common infections in children, and can lead to severe complications such as renal scar, hypertension and chronic renal failure. The aim of this study was to determine the association between risk factors such as age, gender, fever, white blood cell count, infective organism, and presence of Vesicoureteral Reflux (VUR) with the incidence of renal scaring following acute pyelonephritis.

Methods. During a 1- year period a total of 100 children aged 3 months to 15 years old with acute pyelonephritis were enrolled in this study. Patients with solitary kidney or urological abnormalities other than VUR were excluded. Voiding Cystourethrography (VCUG) was performed after the acute phase of infection, and DMSA scan were obtained 6 months after the acute episode of pyelonephritis.

Results. The mean age of study group was 5.14+/-

3.96 years, and most of them were girls (82%). For 44% of patients, one or more renal scars were detected. Most of the scars occurred in boys (77.8% vs.36.6%, P = 0.001). Prevalence of dilated reflux (VUR grade III, IV and V) was significantly higher in positive scar group compared to negative scar group (25.3% vs. 8.1%, P < 0.001). The incidence of non-E-coli pathogens were higher in the scare positive group (28% vs. 7.1%, P = 0.001). The distribution of fever, leukocytosis and age did not differ significantly in two groups (P > 0.05).

Conclusions. Our results showed that permanent renal scars in children with acute pyelonephritis are important, especially in the presence of dilated VUR, non-E-coli pathogens and male sex.

Second Day

Thursday, February 13

O401

Assessment of Electrolyte Free Water Clearance in Renal Transplant Recipients

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Introduction. Few studies have been done on free water excretion capacity in renal transplant recipients. This study was designed to compare electrolyte free water clearance (E-CH2O) in renal transplant recipients with healthy control group.
Methods. A cross-sectional study was conducted to determine three-hour Creatinine clearance (CrCl), E-CH2O, and percent urine output in 3 hours after administering 20 ml/Kg oral water loading following 12-hour fasting, in 25 renal transplant recipients with good graft function (Creatinine < 1.5 mg/dl) and 25 healthy controls. Patients with Diabetes Mellitus (DM), hypertension, ischemic heart disease, or liver disease, hypovolemia and hypoalbuminemia were excluded. Statistical analysis was done using t-test, Chi-square and Pearson's correlation test.
Results. We recruited 25 recipients (73% received kidney from living and 27% from deceased donors) and 25 healthy controls. The mean age was 37.68 ± 13.88 and 31.40 ± 8.20 years old in renal transplant recipients and in control group, respectively. In patient group, male to female ratio was 11/14 and in control group was 14/11. Although the 3h-CrCl was similar (126.49 ± 53.52 vs. 109.99 ± 47.06 ml/min) in two groups ($P > 0.05$), the E-CH2O (1.83 ± 1.22 vs. 2.94 ± 2.02) and 3-hour urine output percent (55.93 ± 22.86 vs 74.11 ± 30.38) in kidney recipients were significantly lower than healthy controls ($P < 0.05$). There was not any significant correlation between E-CH2O and 3h-CrCl in renal transplant recipients. Donor source and gender did not affect 3h-CrCl and E-CH2O in renal allograft recipients.
Conclusions. This study demonstrated that E-CH2O has been decreased in renal transplant patients in comparison with control group when there was not any difference between 3h- CrCl in two groups. This indicates that E-CH2O may be decreased earlier than 3h-CrCl in transplant patients.

O402

Long-Term Survival Rate of Kidney Graft and Associated Prognostic Factors: A Retrospective Cohort Study, 1994–2011

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Introduction. Despite several studies conducted to detect predisposing factors of graft rejection, results are inconsistent and limited. This study was performed to estimate long-term survival rate of kidney transplantation and to detect associated prognostic factors.
Methods. This retrospective cohort study was conducted in Hamadan Province, in western Iran, enrolling 475 patients who had undergone kidney transplantation from 1994 to 2011. Data were extracted from patients' medical records using a checklist. Chronic non- reversible graft rejection was considered as the event of interest. The duration of time between kidney transplantation and rejection was considered as the survival time. Life table, Kaplan-Meier curve, log-rank test and Cox proportional hazard model were used for data analysis.
Results. Out of 475 transplantation, 55 episodes of rejection occurred. One-, 5-, 10-, 15-, and 18-year survival rates of transplantation were 97.1%, 92.3%, 86.2%, 77.6%, and 60.3%, respectively. The hazard ratio of graft rejection per 1-year increase in recipient age was 0.92 ($P = 0.001$). The hazard ratio of graft rejection was 5.47 for grafts from deceased donors compared to grafts from living donors ($P = 0.025$), and 3.54 ($P = 0.025$) and 47.99 ($P = 0.001$) in patients with episode of acute and hyper acute rejection compared to those without rejection episode, respectively.
Conclusions. Rejection of kidney transplantation is shaped by several prognostic factors, the most

important of which are recipient age, type of donor (living vs. deceased), and episode of post-transplantation acute and hyper acute rejection.

O403

Donor and Recipient Related Characteristics that Predict the Early Kidney Graft Function According To Artificial Neural Network's Multilayer Perceptron Method

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Introduction. One the main problem in kidney transplantation from deceased donors is growing number of patients waiting for transplantation and organ shortage. In this study, using artificial neural network multilayer perceptron method, we tried to find donor and recipient characteristics that predict the early kidney graft function; as estimated by recipient's last serum Creatinine prior to discharge from hospital. Application of Artificial Neural Network (ANN) technology seems to be an attractive strategy, considering that this technique uses pattern recognition to discover relationships between input and outcome variables.

Methods. The donors' and recipients' related characteristics of 444 consequent cadaveric kidney transplantations were collected in Mashhad, Iran and analyzed by artificial neural network's multilayer perceptron method. The donors' related characteristics included; age, gender, weight, cause of brain death, cold ischemic time and the last serum creatinine before engraftment. The recipients' characteristics included; age, gender, weight, duration of hemodialysis before transplantation, underlying disease culminating to end stage renal disease and the number of previous kidney transplantations. No HLA type matching between donors and recipients was performed. ANN was constructed and trained by assigning approximately 51% of the patients to the training sample and 32% and 15% to holdout (validation) and testing samples, respectively.

Results. The overall accuracy of ANN model was 87.3%. Overall, 71.6% of the training cases were classified correctly, while for testing and validation cases this percentage was 80.4% and 70%, respectively. Recipient weight, age and duration of hemodialysis emerged as the most important factors predicting the early kidney graft function as estimated by recipient's last serum Creatinine level before discharge from hospital, while among the donor related characteristics, age was the strongest predictor factor.

Conclusions. Recipient weight and age, and donor age are the main predictors of early graft function in cadaveric kidney transplantation in multilayer perceptron analysis method.

O404

Clinical Safety and Efficacy of Suprimun Compared with Cellcept in Renal Transplant Recipients

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Introduction. Immunosuppressive therapies are essential to ensure the acceptance of donated organ. Mycofenolate Mofetile (MMF) is an anti-proliferative/anti-metabolite drug which is widely used from 1995 following a series of clinical trials proving its efficacy to be more than Azathioprine in prevention of acute rejection. Suprimun is a generic form of Cellcept produced by Clausen; it contains MMF and has received the EMEA approval. This product is used from 2003 in most of Latin America countries.This study compares the efficacy and safety of Suprimun with Cellcept in

kidney transplant recipients in order to recommend Suprimun considering its lower costs. This study is ongoing and the report is based on interim analysis but we will be able to report the main data until the presentation.

Methods. A multicenter open label parallel group randomized clinical trial including 100 kidney transplant recipients from 4 centers who were randomly assigned to 2 groups of 50 and treated with Cellcept or Suprimun, along with Cyclosporine and Corticosteroid. Serum Creatinine levels and Acute rejection episodes were measured as main outcomes; Patients were visited 9 times after discharge on schedule. At the end of the 6th month, serum levels of MMF were measured by HPLC technique.

Results. 87 kidney recipients are recruited up to now, 41 cases have completed the follow-up; nineteen in Suprimun and 22 in Cellcept group. No significant differences of Serum Cr, BUN levels and episodes of acute renal failure were reported between two groups. Biopsy proven incidence of acute rejection was reported as 31.5% in both groups ($P = 0.63$). There was no report of serious adverse events in both groups.

Conclusions. According to the data gathered till this stage of study, the results of analysis for main efficacy and safety outcome measures are comparable in both groups with no statistical and clinical difference between two medications. Higher sample size will ensure the power of this conclusion and will be reported in Presentation time.

O501

Our Experience with Encapsulating Peritoneal Sclerosis in Two Iranian Peritoneal Dialysis centers

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Introduction. Encapsulating Peritoneal Sclerosis (EPS) is a devastating complication of long term Peritoneal Dialysis (PD) with high morbidity and mortality. The prevalence is widely varied across globe (0.7-7.3%). Here, we attempt to present our descriptive data of confirmed EPS cases from two Iranian centers. The disease is suspected in a patient with clinical picture of nausea, intractable vomiting, mass effect in the abdomen and bloody effluent, with additional radiologic findings of calcification, peritoneal thickening and loculated ascites, and finally it is surgery that could confirm the definite diagnosis.

Methods. According to clinical, radiological and surgical findings, we determined the EPS cases among PD patients from two centers in Tehran, where we had more comprehensive and precise data. The baseline characteristics and associated factors for these patients were obtained from Iranian PD registry.

Results. We found a minimum of 1.8% EPS prevalence among 600 patients were registered in these two centers, which 54.5% were female. The mean age of patients at the time of EPS was 35.22 ± 10.45 years with a mean PD duration of 83.8 ± 33.56 months. The average Body Mass Index (BMI) at the beginning and the end of PD were 23.35 ± 5.53 Kg/m^2 and 24.85 ± 6.08 Kg/m^2, respectively. EPS was presented while 54.5% of patients were on PD, 18.2% on HD and 27.3% had received kidney transplant. At the beginning of PD, our patients had a mean Glomerular Filtration Rate (GFR) of 5 ± 3.94 ml/min declining to 0.3 ± 0.61 ml/min at the end of PD. The mean level of serum Albumin was 3.2 ± 0.57 mg/dl and approximately 50% of our patients used β-blockers. 77% 0f our patients were high transporter as expected. Mean Kt/V urea and Creatinine Clearance (CrCl) were 1.63 ± 0.41 and 55.1 ± 11 L/w/ 1.73 m^2, respectively. Majority of our patients was dealing with Ultrafiltration (UF) failure (83%). The mean duration of UF failure, D/P Creatinine more than 0.82, and usage of hypertonic 4.25% glucose were 3 ± 3.66, 38.86 ± 24.71 and 16.2 ± 20.38 months, respectively. 62.5% of patients experienced bloody effluent. Total peritonitis episodes were 31, with the mean of 3.1 ± 1.85 per patient. 60% of patients had chemical peritonitis as well. We found 54% mortality among these patients.

Conclusions. Our observation regarding 1.8% EPS among PD patients seems to be in lower side of prevalence value in the world. Moreover, like other reports, majority of our patients suffered from UF

failure. It should be emphasized that present data are coming from only two centers and contribution of other sites in Iran for obtaining more precise and comprehensive information is necessary.

O502

Comparing the Effect of Dressing Versus No-Dressing on Exit Site Infection and Peritonitis in Chronic Ambulatory Peritoneal Dialysis Patients

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Introduction. Peritonitis and Exit Site (ES) infection are two main complications of Peritoneal Dialysis (PD). There are some controversies regarding to preventive strategies for ES care. This study is designed to compare peritonitis and ES infection rates in patients with and without dressing.
Methods. This historical cohort study carried out on 72 patients under Chronic Ambulatory Peritoneal Dialysis (CAPD) treatment, 54 with dressing vs. 18 patients without dressing, followed from October 1st, 2010 to March 31st, 2011. In this period, peritonitis and exit site infection were compared between two groups.
Results. Seventeen episodes of ES infection occurred in 12 patients in dressing group but no case was seen in no-dressing group ($P = 0.02$). Twenty-one episodes of peritonitis occurred in 15 patients in both groups (one episode every 20.6 patient-months). In no-dressing group, two episodes occurred in only one patient (one episode every 54 patient-months), and in dressing group, 19 episodes in 14 patients (one episode every 17.1 patient-months) ($P = 0.03$). Peritonitis was significantly more frequent in male gender vs. female in overall patients (38% vs. 14%, $P = 0.025$) and in dressing group (52% vs. 15%, $P = 0.003$). In dressing group, peritonitis was more frequent in

diabetics vs. non-diabetics (48% vs.11%, $P = 0.01$), and rural vs. urban settled patients (80% vs. 24% $P = 0.023$). According to backward likelihood rate multiple logistic regression analysis, odds ratio for developing peritonitis was 9.4 in dressing group (95% CI = 1.05-84.4; $P = 0.045$), and 4.4 in men (95% CI = 1.26-15.19; $P = 0.02$).
Conclusions. According to this study, chronic ES care without dressing was associated with lower risk of peritonitis and ES infection.

O503

Relationship Between Obesity and Mortality in Continuous Ambulatory Peritoneal Dialysis Patients

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Introduction. The relationship between Body Mass Index (BMI) and mortality in Hemodialysis (HD) patients is conflicting. The aim of this study was to evaluate BMI and mortality in Continuous Ambulatory Peritoneal Dialysis (CAPD) patients.
Methods. A retrospective cohort study was performed on 160 CAPD patients with age more than 18 years. The patients were divided in two groups according to BMI < 30 and BMI ≥ 30 (obese and non-obese groups, respectively). The primary outcome was death and patients were followed for 15 years. The other confounding variables could affect on patient survival such as age, Diabetes Mellitus (DM), sex, serum albumin, ischemic heart disease and peritonitis were measured and controlled by logistic regression.
Results. The mean BMI was 24 ± 3.5. The mean BMI was higher in death groups compared with alive patients (25 ± 3 vs. 22 ± 3.5, $P < 0.01$). The death was more common in obese patients compared with non-obese (60% vs. 40%, $P < 0.01$). After control of confounding variables, obesity was still significantly associated with higher mortality ($P < 0.05$).
Conclusions. In CAPD patients, obesity increases mortality. However, further prospective multicenter studies are needed to confirm this effect.

Second Day

P201

The Effect of Lactulose Supplementation on Fecal Microflora of Patients with Chronic Kidney Disease

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Introduction. Due to resistance to digestive enzymes but fermentability by human intestinal microflora colonies, lactulose carries pH-lowering and bifidogenic effects. Lactulose is given in patients with Chronic Kidney Disease (CKD) to prevent an increase in urea and ammonia. The present study investigated the effect of lactulose on faecal microflora of patients with CKD.

Methods. Thirty-two patients with CKD (43.8% male with mean age of 58.09 ± 12.75 years) were randomly divided into two groups, intervention group (whom were given 30 mililiter of lactulose syrup three times daily for 8 weeks) and a control group. A sample of 2 grams of stool was prepared from the patients in advance and another sample was taken after 8 weeks. Then, the bacterial colonies of lactobacillus and bifidobacterium were counted and compared between two groups.

Results. There was no significant statistical difference regarding hemoglobin, Blood Urea Nitrogen (BUN) and creatinine levels before intervention. At the end of study, the lactobacillus and bifidobacterium colony counts were much more in intervened group in comparison with control group (87.5% and 50%, respectively), but the difference was not significant ($P = 0.22$ and $P = 0.47$, respectively).

Conclusions. This study showed insignificant rising of intestinal lactobacillus and bifidobacterium colony counts with lactulose administration in patients with CKD. So, further studies seem to be employed.

P202

Clinical and Radiological Evaluation of Children with Infantile Hydronephrosis

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Introduction. Hydronephrosis, a common problem before and after birth, is diagnosed by Ultrasonography (US). Vesicoureteral Reflux (VUR), obstruction of the upper and lower urinary tract and neurogenic bladder are the most common causes of hydronephrosis in neonates and infants. Close follow-up and adequate treatment will prevent serious complications in these patients.

Methods. One hundred neonates and infants who had hydronephrosis followed for one year. Laboratory tests, US, Voiding Cyctouretrogram (VCUG) and Radioisotope studies were done for all, as needed. Patients divided to fetal-diagnosed and infantile–diagnosed groups regarding to the time of diagnosis. Classification of hydronephrosis severity was based on the Renal Pelvic Diameter (RPD): mild (RPD = 5-9 mm), moderate (RPD = 10-15) and severe (RPD more than 15).

Results. Fifty-four cases were male and 46 were female. The mean age of patients was 2.5 months in the fetal-diagnosed hydronephrosis and 5 months in the infantile group. 79% of cases with fetal–diagnosed were asymptomatic and all patients of the infantile-diagnosed hydronephrosis had symptoms. Causes of fetal-diagnosed hydronephrosis were VUR (45%), idiopathic (41%), UPJO (11%), physiologic (5.7%) and Posterior Urethral Valves (PUV) (3.8%). VUR was the most common causes of hydronephrosis in all. UPJO and VUR were the most common causes of the severe and mild hydronephrosis, respectively. Hydronephrosis resolved in 50% of all cases (63% with fetal-diagnosed and 36% with infantile hydronephrosis). Surgery was required in 100% of the cases with severe hydronephrosis, 30% and 6% of moderate and mild ones, correspondingly.

Conclusions. Prenatal screening US has caused more detection of asymptomatic cases of fetal hydronephrosis in comparison to the infantile-diagnosed hydronephrosis and less complications as a result.

P203

Repeated Measurement Analysis of ACR and GFR in CKD Management Program, Shahreza, Iran

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Introduction. Chronic Kidney Disease (CKD) is prevalent in diabetic and hypertensive patients. Chronic care modeling is used for mangment of CKD. This study is designed to prove effectivness of CKD management program in Shahreza.

Methods. CKD management program developed in Ministry of Health and thenthe pilot project was conducted since February 2011 in Shahreza, Iran. The patients at risk are confirmed with serum creatinine and urine albumin creatinine ratio. CKD management program take in training, screening, monitoring and controlling of weight, hypertension, Diabetes Mellitus (DM), lipids and vitamin D. In this study, we use repeated measures ANOVA for analysis Albumin Creatinine Ratio (ACR) and Glomerular Filtration Rate (GFR).

Results. ACR changes considered statistically significant (F = 4.74, P = 0.009). The mean ACR changes in two groups with or without CKD are statistically significant in all times (F = 28.95, P < 0.001). It is explained that interaction between ACR measurement times and CKD group is significant (F = 3.96, P = 0.02).This means that ACR changes were different over time. But in the group without CKD, the mean ACR decreased rapidly from 1 to 2 and from 2 to 3 has been slightly increased. However, the GFR variable measured in three times, all measured were dependant on each other. To investigate GFR changes and comparison between two groups of CKD group and group without CKD over times use repeated measures ANOVA. According to the results, GFR changes considered statistically significant (F = 64.455, P < 0.001). The mean ACR changes in two groups with or without CKD are significant analytically in all times. (F = 21.619, P < 0.001). It is explained that interaction between GFR measurement times and CKD group is significant (F = 54.562, P < 0.001). This means that GFR changes were different over time. GFR mean was always lower than the group without CKD and trend of GFR increased. But the group without CKD, the mean GFR increased rapidly from 1 to 2 and from 2 to 3 has been decreased.

Conclusions. CKD management program improves management of CKD in primary health care.

P204

Relationship Between Life-Style and Severity of Chronic Renal Failure in Shiraz MRI Hospital in 2012

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Introduction. Nowadays it is proved that life-style has an important role whether or not to be affected by one ofnon-contagious diseases. So, this study was conducted to define the life-style of the patients admitted in MRI hospital in Shiraz, Iran in 2012.

Methods. Present study is a correlational one. The study group includes 66 patients who were admitted in MRI hospital suffered from Chronic Kidney Disease (CKD). Data was collected using a questionnaire which included 42 questions divided into three parts namely demographic data, disease data and life style data consisting 8 behavioural fields.

Results. Out of 66 patients, 68.18% was male with mean age 59 ± 15/2 years. 92.42% was married, 31.82% retired and 45.45% educated to secondary or high school level. The mean Blood Urea Nitrogen (BUN) and Creatinine were 53.62 ± 17.09 and 2.84 ± 6.14, respectively. Mean height, weight and Body Mass Index (BMI) were 168.39 ± 9.87, 66.45 ± 14.14 and 23.36 ± 4.0, respectively. 66.67% of the patients suffered from stage 5 CKD and Glomerular Filtration Rate (GFR) was 16.27 ± 11.67 (End-Stage Renal Disease). Nutritional habits in terms of consuming low vegetables and fruits, and high meat, salt, fat and fried food are related to disease severity. White meat consumption has no relationship with the severity of disease. There is no relationshipbetween smoking, shisha, alcohol and narcotics and disease severity. Moderate physical activity, work activities and professional sports activities were inversely related to the severity of the disease.The number of hours of sleep at night is inversely related to the severity of the disease while there is no relation between the number of days with day time sleeps and severity of the disease.Waking up at night to urinate and frequent daily urination was inversely related to severity of disease.Sexual activity was inversely related to disease severity. Recreation and social relations

in the amount of leisure travel, travel and leisure with family and friends and going to parties, in family meetings' participation were inversely related to severity of disease. Also contact with friends and relatives did not show a correlation with disease severity.

Conclusions. The results show that to maintain a balanced life-style can reduce the speed of disease progression.

P205

Cross-Talk Between Endothelin-1 and Mineral Metabolism in Hemodialysis Patients: a Cross-Sectional Study

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Introduction. Endotheline-1 (ET-1) as an endothelial mediator has influence on mineral metabolism, especially on vascular calcification in uremic patients.The aim of this study is to investigate the relationship between Endothelin-1 (ET-1), high sensitivity C-Reactive Protein (hsCRP) and mineral metabolites.

Methods. Forty-six chronic stable Hemodialysis (HD) patients were classified based on the Calcium (Ca), Phosphorus (P), Ca-P product (Ca×P) and intact Parathyroid Hormone (iPTH) levels. Serum samples were collected from patients and 46 healthy control subjects (HC). Biochemical factors composed of ET-1and hsCRP were determined by the standard methods.

Results. The levels of serum hsCRP and ET-1 were significantly higher in the entire patients group compared with controls with regard to ca×p product ($P = 0.000$, in both), p ($P = 0.000$, in both) and iPTH ($P = 0.04$, $P = 0.02$, respectively). Serum ET-1 was correlated significantly with hsCRP level (r = 0.776, $P = 0.000$). Serum P, Ca, Ca×P and iPTH levels were directly correlated with serum ET-1 in HD patients ($P < 0.001$).

Conclusions. Serum P and iPTH levels were independently associated with ET-1 and those may play a role in development of endothelial dysfunction in Chronic Kidney Disease.

P206

Evaluation of Serum MBL level in Peritoneal Dialysis Patients and Comparison with Healthy Individuals

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Introduction. Mannose-binding Lectin (MBL), as a liver-derived lectin, has an important role in host defense through activation the lectin complement pathway. MBL also acts as an acute-phase reactant. The aim of this study was to measure serum MBL level in Peritoneal Dialysis (PD) patients and compare with healthy group.

Methods. In this study, 70 PD patients and 70 healthy individuals were entered to this study. Serum MBL levels were measured by ELISA using Mannan molecule, In addition, serum C-reactive Protein (CRP) and Albumin levels were measured to determine whether there is correlation between serum MBL level and these two parameters.

Results. Mean ($\pm$ SD) of serum MBL level in patients group was $2.32 \pm 2.54\mu g/ml$ and in control group was $1.8 \pm 2.14\ \mu g/ml$ ($P = 0.191$). No significant correlation was found between serum MBL and CRP levels (r = 0.036, $P = 0.674$) and MBL and Albumin levels (r: 0.018, P = 0.835) in patients group.

Conclusions. Serum MBL level was not significantly different between PD patients and healthy individuals. But it has to be confirmed in future studies.

P207

Effects of Pioglitazone on Oxidative Stress Biomarkers in Diabetic Kidney Transplant Recipients: A Randomized Placebo-Controlled Trial

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Introduction. The aim of this study was to evaluate the effects of Pioglitazone on blood glucose level and oxidative stress biomarkers in diabetic patientsafter kidney transplantation.

Methods. In a triple-blind randomized placebo-controlled trial, sixty-two kidney transplanted diabetic patients randomly assigned to placebo and Pioglitazone (30mg/d) group. 40 (64%) of these patients were male and the rest were female. All of the patients continued their insulin therapy irrespective of the group they were assigned and were followed for 4 months to evaluate the effects of addition of Pioglitazone on blood glucose, Malondialdehyde (MDA) and Total Protein Carbonyls (TPC) serum levels. MDA is an indicator of lipid peroxidation and TPC is the most commonly used marker of protein oxidation.

Results. There were no statistically significant differences in blood glucose and oxidative stress biomarkers level between two groups at baseline. After 4 months of intervention, along with significant improvement in HbA1c in Pioglitazone group, daily insulin NPH requirements also decreased significantly. Changes in HbA1c was statistically different at the end of study between two groups (P-value = 0.0001, 1.04-2.18). There was a statistically significant improvement in serum triglycerides, total cholesterol, LDL and HDL levels in Pioglitazone group. MDA level was significantly decreased in Pioglitazone group and changes in MDA level was statistically different at the end of study between two groups (P-value < 0.0001, 1.22-3.90). The changes in TPC level were not statistically different neither at baseline nor at the end of study between two groups (P-value = 0.98).

Conclusions. Administration of Pioglitazone in addition to insulin in diabetic kidney transplant recipients not only improved glycemic control (evidenced by HbA1c) and reduced daily insulin requirement but also significantly decreased MDA level that may have a positive impact on atherogenesis and mortalities beyond glycemic control.

Neuropathy in Type-1 Diabetic Renal Transplanted Recipients

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Introduction. Diabetic Neuropathy (DN) is one of the most important complications of type-1 Diabetes Mellitus (DM) .DN is partly an etiology of diabetic foot in these patients, Electrodiagnostic studies have been used for diagnosing of DN. Up to now, little has been known about kidney transplantation effect on DN. Indications for kidney transplantation in type-1 DM have been increased recently, so number of kidney transplanted recipients with type-1DM is increasing. However, this is still unclear weather or not long-term DN may be improved by renal transplantation alone.

Methods. From April 2007 to June 2010, thirty Renal Transplant (RT) recipients with type-1 DM and thirty type-1 diabetic patients with End-Stage Renal Disease (ESRD) were enrolled in this study. Electroneurodiagnostic tests of peroneal, sural, ulnar, and median nerves were done. Nerve Conduction Velocity (NCV), Compound Motor Action Potentials (CMAPs) and Sensory Nerve Action Potentials (SNAPs) were analyzed at 6, 12, 18 months after renal transplantation.

Results. The NCV improved in the RT group in 18months of follow up period ($P < 0.01$ vs. baseline). This parameter worsened significantly in the control group throughout the study ($P = 0.03$) and in a cross-sectional analysis between two groups. We could not find any remarkable differences ($P = 0.07$). Both SNAP and CMAP amplitudes improved in the RT (SNAPSural = 0.04, SNAPMedian = 0.01and CAMPPeroneal = 0.03, CAMPUlnar = 0.02) but they worsened in the control group (SNAPSural = < 0.001, SNAPMedian = < 0.01and CAMPPeroneal = < 0.01, CAMPUlnar < 0.01). Comparison of both groups did not show any significant statistical changes.

Conclusions. Electroneurodiagnostic values improved after renal transplantation in type-1 diabetic patients with ESRD but cross sectional analysis did not revealed statistical differences between studied groups.

Second Day

P209

Hyperhomocysteinemia and Assessment of its Predictive Factors in Renal Transplant Recipients: a Single Centre Study in Iran

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Introduction. Hyperhomocysteinemia (hyperHcy) is an important risk factor for atherosclerosis, which is currently a major cause of death in Renal Transplant Recipients (RTRs). The aim of this study was to determine the predicting factors of hyperHcy in RTRs.

Methods. In 148 stable RTRs, total serum homocysteine (tHcy) level, Folate, serum Albumin and creatinine, creatinine clearance, lipid status, Body Mass Index (BMI) and blood cyclosporine levels (C0 & C2) were determined. The mean doses of cyclosporine A (mg/kg/day) were recorded.

Results. The mean serum tHcy level was significantly higher in RTRs than in controls (16.26 ± 8.32 vs. 11.62 ± 4.26 micromol/L; $P = 0.0001$), and the prevalance of hyperHcy was 70.3%. Comparison of the group of 44 patients with tHcy level < 12 micromol/L and the group of 104 patients with tHcy level > 12 micromol/L revealed that those subjects with hyperHcy were mostly younger, male, with lower BMI, history of glomerulonephritis, higher serum level of uric acid and blood cyclosporine trough level (C0) and used higher doses of cyclosporine A. Significant correlation was found between tHcy level and recipients age, serum creatinine, BUN, folate concentrations and creatinine clearance. However, multivariate analysis indicated that serum folate ($P = 0.01$), vitamin B12 ($P = 0.05$), creatinine ($P = 0.03$) and BUN ($P = 0.05$), and blood cyclosporine trough level (C0, $P = 0.005$) were independently associated with tHcy levels.

Conclusions. HyperHcy persists after successful kidney transplantation in the majority of RTRs. Serum creatinine, BUN, Folate and vitamin B12, and blood cyclosporine trough level (C0) are independent determinants of tHcy levels.

P210

Comparison of Tpe Changes on ECG Pre- and Post-HD and After Transplantation

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Introduction. Having considered Tpe index and T wave analysis in predicting dangerous arrythmias, in this study the effects of dialysis and renal transplantation on Tpe, Tpec, Qtc, Qtd, Tpe/Qtd parameters and also the association between electrolyte change, arterial blood gas and these parameters are assessed.

Methods. In a retrospective study, 42 transplant recipients in case of not having the excluding criteria were selected, under the supervision of a cardioelectrophysiologist. General information and electrolyte information, Arterial Blood Gas (ABG) before and after Hemodialysis (HD), and after transplantation were analyzed.

Results. The mean Pre-HD and Post-HD Tpe were 0.063 ± 0.002 & 0.058 ± 0.002 ($P = 0.087$), respectively. Two weeks after transplantation, it was 0.052 ± 0.002 which was significant before ($P < 0.001$) and after HD ($P = 0.019$). The mean Pre-HD and post-HD Tpec were 0.0672 ± 0.003 and 0.0614 ± 0.002 which was statistically significant ($P = 0.030$). After transplantation, it was 0.059 ± 0.002, that just compared to Pre-HD was significant ($P = 0.005$). The mean Pre-HD and Post-HD QTd were 0.073 ± 0.005 & 0.070 ± 0.004 ($P = 1.000$), respectively. Following transplantation, it was 0.066 ± 0.004 which was not significant before and after HD. The mean Pre-HD and Post-HD Tpe/Qt was 0.162 ± 0.006 and 0.146 ± 0.005, respectively which was a significant change ($P = 0.014$). After transplantation, it decreased to 0.143 ± 0.005, compared to Pre-HD it was significant ($P = 0.018$). The mean Pre-HD and Post-HD QTc were 0.396 ± 0.005 and 0.403 ± 0.005 ($P = 0.319$), respectively. After transplantation, it decreased to 0.386 ± 0.004, compared with Post-HD it was significant ($P = 0.0003$).

Conclusions. Considering the role of Tpe in arrhythmia and amending it by a successful

transplantation, it can be considered as an arrhythmogenicity index in End Stage Renal Disease (ESRD), and it justifies the improvementof survival in transplant recipients compared with ESRD patients.

P211

A 58 Year-Old Kidney Transplant Male with Granulomatous Interstitial Pneumonitis Associated with Sirolimus

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Introduction. Pulmonary toxicity is a rare but serious side effect of Sirolimus that firstly was reported in 2000. Sixty-four cases were reported up to 2005, but a few cases of granulomatous type have been described to date. Hereby, we describe a case of granulomatous interstitial pneumonitis 18 months after initiation of Sirolimus in a 58 year-old kidney transplant recipient underlying autosomal dominant polycystic kidney disease.
Case Report. The patient was presented with exertional dyspnea, malaise, cough and chest tightness during two weeks ago. He underwent kidney transplantation 3 years before admission due to Autosomal Dominant Polycystic Kidney Disease (ADPKD). His regimen had been changed to Sirolimus around eighteen months ago due to creatinine rising on premier regimen with Cyclosporine and Tacrolimus. He was not febrile and physical exam was unremarkable except for fine crackles in basilar zones of lung. Oxygen Saturation (SaO2) was 85% at rest and 78% during 6 minutes walk test. Laboratory data were entirely in normal range. Chest Computed Tomography scan revealed bilateral middle and lower infiltrations. Given the suspicion of Sirolimus side effects, we discontinued it and Bronchoalveolar Lavage (BAL) and transbronchial lung biopsy were done in order to exclude other possible etiologies. BAL was negative for malignancy and infectious disease such as Mycobacterium, viral, bacterial and fungal agents. Histopathologic report revealed granulomatous pneumonitis. His condition improved in a few days. SaO2 was 93% and 90% at rest and after 6 minute walking test, respectively.
Conclusions. The diagnosis of Sirolimus induced interstitial pneumonitis was established according to histopathology and excluding of possible etiologies. Sirolimus should be taken into account in differential diagnosis of granulomatous interstitial pneumonitis among transplantrecipients.

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Impact of Ritoximab in Treatment of Acute Antibody-Mediated Rejection in Renal Allograft Recipients

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Introduction. Acute Antibody Mediated Rejection (AMR) occurs in approximately 5.6 to 23% of kidney transplants and is associated with 50% Allograft loss. Concerning high incidence, resistance to routine therapies and poor outcome, we decided to use Rituximab (RTX) in treatment of Acute AMR.
Methods. All patients underwent kidney transplantation between 1388 and 1390 and developed Acute AMR resistant to known therapies were included. After consent and whenpatients were resistant to 1 week usual therapies, we prescribed 2 doses of 375mg/m^2 RTX weekly. Then we followed up the patients and evaluate survival and Kidney function (Creatinine) at 1, 3 and 12 months.
Results. Nine patients were recieved RTX after 1 week usual therapy. Two patients recovered at 1 month. Patient and graft survival at 1, 3 and 12 months was 100% and 77% with mean creatinine 1.6, 1.5 and 1.45 (P-Value < .005).
Conclusions. The findings of this study showed that treatment of Acute AMR with RTX may resolve it and improve outcomes.

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Prevalence of Metabolic Syndrome in Renal Transplant Recipients, A Single Center Study

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Introduction. Metabolic Syndrome (MS) is a cluster of Cardiovascular (CV) risk factors (hypertension, dyslipidemia, obesity, and glucose homeostasis alterations). In Renal transplant recipients, MS has been shown to be an independent risk factor for Chronic Allograft Dysfunction (CAD), graft failure, new-onset diabetes, and CV diseases. In this study, we investigated the prevalence of MS in renal transplant recipients in north east of Iran.
Methods. A cross-sectional study was conducted to determine the prevalence of MS in 106 renal transplant recipients at Montaserieh Hospital, Mashhad, Iran. The prevalence of MS was determined using the National Cholesterol Education Program-Adult Treatment Panel III (NCEP-ATPIII) criteria. All patients were more than six months post-transplant and above 16 years of age. Subjects with pre-transplant diabetes and taking immunosuppressive drugs of the target organ inhibitor group such as Rapamycin, were excluded.
Results. A total of 52 out of 106 patients (49.1%) had MS including 32 out of 62 male patients and 20 out of 42 female patients. Among the patients with the MS, 34 (32.1%) had 3 inclusion criteria and 12 (11.3%) had 4 inclusion criteria and 6 (5.7%) had 5 inclusion criteria. Among patients without MS, 30 (28.3%) presented only with 2 criteria for MS, 18 patients (17% of total) had only 1 criteria. Regarding the single factors of MS, 85 patients (80.2%) presented with arterial hypertension, 77 (72.6%) had hypertriglyceridemia, 14 (13.2%) presented with high fasting glucose levels, 61 (57.5%) had low HDL levels, and 21 patients (19.8%) had greater waist circumference.
Conclusions. As MS is an important and common risk factor in renal transplant recipients, we have to try to prevent it by education of patients to control it by modifying their life style. It consists of efforts on promoting healthy diet, physical activity, and blood pressure control.

P214

Effects of Low Dose Pamidronate on Early Bone Loss Following Renal Transplantation: a Randomized Controlled Trial

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Introduction. Renal Transplantation (RTx) is associated with rapid loss of Bone Mineral Density (BMD) in the first months after transplantation. The effect of Pamidronate on bone loss after transplantation was evaluated in a randomized controlled trial.
Methods. Fortykidney transplant recipients were enrolled in this study (16 in Pamidronate group and 24 in control group). Pamidronate was administered as 30 mg intravenous infusion within two days after transplantation and three months later. All patients received calcium and vitamin D supplementation. Laboratory parameters and BMD (lumbar spine and femoral neck) were measured at 0, 6 months after RTx.
Results. BMD at the initiation of study had no significant difference between two groups. In each group, BMD of femoral neck and lumbar spine six months after transplantation had no significant difference in comparison to pre-transplantation values. BMD changes after intervention was compared between two groups and there was no significant difference between two groups. Parathyroid Hormone (PTH) level normalized in both Pamidronate and control group six months after RTx. Glomerular Filtration Rate (GFR) at the end of study was not significantly different between two groups.
Conclusions. Our study suggests that administration of calcium and vitamin D post-transplantation may be beneficial to counterbalance the substantial bone loss occurring within six months after transplantation and addition of low dose Pamidronate has no beneficial effect on BMD in this short interval after RTx.

P215

Outcome of Sirolimus Therapy for Post-transplant Lymphoproliferative Disorders: Case Series

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Introduction. Post-transplant Lymphoproliferative Disorders (PTLD)is a complication of chronic immunosuppressive therapy in solid organ transplantation with a high mortality rate.
Methods. A detailed retrospective analysis was performed according to data collected from 13 patients with PTLD. At the time of PTLD diagnosis, immunosuppressive therapy was decreased and Sirolimus administered. Overall survival and disease free survival of patients and graft survival were determined.
Results. Among 590 kidney transplant recipients, 13 adult patients with PTLD were included. The mean age of patients was 42.15 (range 25-58) years at the time of PTLD diagnosis, and 9 patients were male. Histology was distributed in 9 diffuse large B-cell, 1 Malt lymphoma, 1 Burkitt lymphoma, 2 Hodgkin-like PTLD. The response rate to Sirolimus alone was 30.8%. The mean overall survival period was 27.4 months with 9 patients still living. In total, 10 patients (76.9%) achieved a complete remission, with functioning graft in 11 (84.6%) patients.
Conclusions. Despite retrospective and limited number of patients, this study provides promising results regarding the effectiveness of stopping calcineurin inhibitors and switching to Sirolimus for patients with PTLD.

P216

Incidence of Malignancy after Kidney Transplantation, a Single Center Study from Hamadan University Transplant Center

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Introduction. Immunosuppressive medications have resulted in longer life expectancy of kidney transplant recipients. However, the incidence of post-transplant malignancies is increasing.They lead to morbidity and mortality of recipients.A couple of studies have described an overall three to eight fold increase in risk of malignancies compared to general population.The aim of this study is to find out the prevalence of malignancies after 19 year follow-up of kidney transplant recipients.
Methods. Between 1994 and 2013, 500 patients underwent kidney transplantation in Hamadan University transplant center.The incidence and types of post-transplant malignancies were retrospectively analyzed according to patients' records.
Results. We found 26 cases of malignacies (26/500, 5.2%).The mean follow-up time was 10 +/- 2 years. Non-melanoma Skin malignancies were the most frequent ones among the tumors (7 cases, 1.4%), followed by Lymphoma (5/500, 1%), cervical cancer, bladder cancer, breast cancer, kaposi sarcoma (2/500, 0.4%). In terms of the duration from renal transplantation to tumor detection, most of skin malignancies were detected in Azathioprine-based regimen.
Conclusions. In our study, the incidence of malignancies after kidney transplantation was 5.2%.Non- melanoma skin cancers were the most frequent tumors.In the best of our knowledge, the most frequent malignancies reported from other centers in Iran were Kaposi Sarcoma and Lymphoma. It is possible that longer follow-up is needed to detect more skin malignancies.It should be reminded that patients on Azathioprine-based regimen were older and with longer period on immunosupressive drugs.A multi-center study to determine the incidence of malignancies in Iran is recommended.

P217

Patients' Experiences from Their Received Education About the Process of Kidney Transplant: A Qualitative Study

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Introduction. Kidney transplantation needs long term treatment, care and follow-up. Patients with kidney transplant need support in the fields of knowledge, skills and motivations. Several researches showed existing challenges regarding education of these patients. A qualitative study was conducted to define patients' experiences from their received information about the process of kidney transplant.

Methods. This was a qualitative study with a content analysis approach. Sampling was purposive up to data saturation.The study group was 18 kidney transplant recipients aged 18-60 years. The data were collected by semi-structural individual in-depth interviews. The interviews were analyzed by Graneheim and Lundman content analy sis method.

Results. Three general themes of «Educational Experiences at the Beginning of Transplantation», "Educational Experiences in Post-transplantation Care», and «Patients struggle to Enhance their Awareness in order to Preserve their Transplanted Kidney» were emerged.

Conclusions. The findings showed that patients did not receive adequate knowledge about kidney transplant process. This issue reveals an unstructured and uncoordinated education given to kidney transplant patients by health team members during kidney transplantation process. With regard to high motivation of the patients, designing such educational program based on self-management in the process of kidney transplant for these recipients is essential. Nurses in their educational role can enable the patients through educating them about problem solving methods and selection of the best solution to preserve their transplanted kidney and consider renal transplant recipient self-management as their first priority toward these patients.

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Comparison of Serum Adiponection Before and After Kidney Transplantation

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Introduction. Serum Adiponectin has been proposed to have role in coronary disease and cardiovascular events in general population. Concentration of this protein increases in renal insufficiency but the role of kidney in adiponectin eliminatin is undetermined. The aim of this study is to compare the concentration of serum adiponectin before and after kidney transplantation and its association with renal function after transplant.

Methods. We enrolled 40 candidates (36 Hemodialysis and 4 Peritoneal Dialysis patients) along with 40 healthy persons as control group. These groups were matched for both age and gender. Concentration of Adiponectin was measured with ELISA method one day before kidney transplantation (after dialysis) and 14 days after kidney transplantation with stable kidney function.

Results. There was a positive relation between Glomerular Filtration Rate (GFR) with Adiponectin (r = 0.328, P = 0.039) and HDL with Adiponectin (r = 0.374, P = 0.017). There was a positive relation between creatinine and HDL distribution between two groups after transplantation. There was a positive relation between GFR, creatinine and HDL before and after transplantation. Concentration of Adiponectin in End Stage Renal Disease (ESRD) patiens was higher than healthy controls (20.6 µg/ml vs. 9.97 µg/ml). After transplantation, concentration of Adiponectin was higher than healthy controls (18.13 µg/ml vs.9.97 µg/ml). In comparision of before and after transplantation, concentration of Adiponectin was lower after transplantation but was higher than healthy controls.

Conclusions. Kidney function is proposed to be an effective factor in Adiponectin concentration.

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BKVirus Screening After Kidney Transplantation

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Introduction. Nephropathy from BK Virus (BKV) infection is an evolving challenge in kidney transplant recipients. It is the consequence of modern potent immunosuppression aimed at reducing acute rejection and improving allograft survival. Untreated BKV infections lead to kidney allograft dysfunction or loss. Decreased immunosuppression is the principle treatment but predisposes to acute and chronic rejection. Screening protocols for early detection and prevention of symptomatic BKV nephropathy have improved outcomes. It has been recommended that screening for BKV should be performed every 3 months for the first 2 years after transplantation.

Methods. In a prospective, three-center study, we followed 98 renal transplant recipients who were receiving immunosuppressive therapy that included Cyclosporine (CSA), Mycophenolate Mofetil and Prednisolone. Plasma BKV DNA was measured 3, 6, 12, 18 and 24 months after transplantation and whenever serum creatinine increased or kidney biopsy was indicated. The viral load in plasma was quantified with the use of a real time Polymerase Chain Reaction (PCR) method. Renal biopsy was performed if allograft function was deteriorated.

Results. Subjects were 14 to 71years old, mean 36.50 (15.34) included 34 male and 64 female. They were followed 6 to 24 months, mean 16.32 (6.68) months. Fifteen cases (15.3%) received ATG because of delayed graft function or rejection, from253 PCR tests that was done during follow-up, 65 (26%) was positive and 188 (74%) was negative. In 46 (47%) cases at least one PCR test was positive during period of follow up. Among positive PCR tests, viral load was less than100 copy/ml in 44 (68%), 100-1000copy/ml in 11 (17%), 1000-10000 copy/ml in 4 (6%), and > 10000 in 6 (9%) tests, only in 4 (6%) cases viral load was more than 10000 copy/ml.

Conclusions. Among renal transplant recipients, a positive BKV DNA PCR is common but viral load is usually less than 1000 or even100copy/ml, significant viral load that is 10000copy/ml that is BKV nephropathy is not a common finding.

Prevalence Of CMV Infection In Kidney Transplant Patients of Montaserie Hospital

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Introduction. Cytomegalovirus (CMV) is one of the most important pathogens in kidney transplantation. The direct and indirect effects of CMV infection result in significant morbidity and mortality among kidney transplant recipients. About 20% to 60% of all transplant recipients develop symptomatic CMV infection. Although the CMV-seropositive donor Seronegative - recipient (D+/R-) group is at the highest risk for symptomatic disease, analysis of registry data showed that patients belonging to the seropositive-donor/seropositive-recipient (D+/R+) group had the worst patient and graft survival, particularly in the setting of discordant HLA-DR match.

Methods. In this study, we have evaluated the prevalence of CMV infection in patients that had kidney transplant in Montaserie Hospital of Mashhad University of Medical Science.334 patients had recieved kidney transplant from 1390 to 1392.

Results. Forty-three out of 334 patients (12.8%) had CMV infection. Nineteen patients (44.2%) were male and 24 patients (55.8%) were female. Concurrent urinary tract infection was present in 14 patients (32.6%). The most common presentation of the infection were fever and rising of Creatinin (81.4% and 20.9%).About 58% of patients had graft rejection that after treatment resolved. Eighteen patients (41.86%) in initiation of transplant had given Thymoglobulin for Delayed Graft Function (DGF). 97.7% of them had previous history of CMV exposure (IgG anti CMV positive) and 100% of donors (deceased and living) also had been IgG anti CMV positive. The average consumption of Cyclosporine in these patients was about 4.38 ± 0.17 mg/kg and Prednisolone was about 19.08 ± 1.13 mg/day. None of patients were on standard protocol of pre-emptive or prophilaxis regimen except in duration of Thymoglobulin receiving period.

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Conclusions. Considering economic problems of general population in our country and incomplete coverage of insurance organization, to use these protocols has not been possible. In spite of not using standard protocols, low prevalence (12.8%) of this infection in this group of patients is very important and needs to be considered more seriously in the future.

P221

A Comparison of Quality of Life of Patients Undergoing Hemodialysis Versus Peritoneal Dialysis and Its Correlation to Quality of Dialysis

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Introduction. Over the years, there has been a steady increase in the number of patients requiring dialysis. No consensus exists that which one, Hemodialysis (HD) or Peritoneal Dialysis (PD), is the preferred method of dialysis for patients. In this study, we have compared the quality of life of patients undergoing either HD or PD.

Methods. This cross-sectional study was conducted in the dialysis center of Nur and Saint Aliasghar University hospital in Isfahan, Iran in 2012. Forty-six patients who underwent PD (28 males and 18 females) and 46 similar patients undergoing HD (26 males and 20 females) were compared. A standardized Persian version of the SF-36 tool was used to assess the quality of life and to assess the quality of dialysis, weekly KT/V in patients undergoing PD and single random KT/V sampling in HD patients were assessed.

Results. Patients undergoing HD reported higher scores in emotional role functioning while patients undergoing PD reported higher scores in physical functioning. The lowest scores in both groups were reported in mental health section. In physical functioning section, physical role functioning section and overall score of the SF-36 tool, PD patients reported significantly higher scores compared to HD patients (P-Value < 0.05). There was no significant difference between the quality of the dialysis in the two patient groups.

Conclusions. Aspects of quality of life such as physical functioning, physical role functioning, bodily pain, general health perceptions, and overall score were significantly different between two groups. If these results are substantiated by subsequent longitudinal studies, then perhaps the choice of dialysis could be guided in patients by quality of life issues.

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Omega-3 Improves Pruritus In Patients under Maintenance Peritoneal Dialysis

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Introduction. Skin itching affects 50-90% of patient undergoing Peritoneal Dialysis (PD) or Hemodialysis (HD). The mechanism of pruritus in this patient is not well known. One of the etiologies of this symptom is inflammatory mediator derived from abnormal metabolic of fatty acid in End Stage Renal Disease (ESRD) patients. Considering the fact that EPA which is direct metabolite of omega-3 has anti-inflammatory and anti-pruritus activity and also its low concentration in plasma of ESRD patients, we conducted this study to evaluate the efficacy of omega-3 in the management of pruritus in patient under PD.

Methods. This double-blinded, randomized, placebo-controlled cross-over trial was conducted on 40 patients (mean aged 62 years with 52.5% female) who were on maintenance PD and suffering from pruritus. Participants were randomized into two groups, one group received one month omega-3 (3000 mg/day), manufactured by Zahravi Company, Tabriz, Iran, six weeks wash-out period, and one month of placebo therapy manufactured by the same company, and other next group received the reverse protocol. Pruritus was assessed at baseline and then every two weeks using a numerical rating scale from 0 to 10.

Results. There was a significantly greater decrease in pruritis score of patients who receiving omega-3

supplementation firstly compared to the other group after 10 weeks (P-Value < 0.05), but after 14 weeks there was no significant differences between two groups. No severe side effects were observed. **Conclusions.** Omega-3 supplementation may decrease pruritis in patients with PD but further studies with larger sample size, longer therapy duration and follow-up are recommended.

P223

Comparative Study of the Prevalence of Metabolic Syndrome in Patients on Hemodialysis and Peritoneal Dialysis in Isfahan, Iran

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Introduction. One of the major causes of mortality in patients with kidney failure requiring dialysis is cardiovascular disease. Metabolic Syndrome (MS) refers to a collection of metabolic disorders that causes systemic inflammation and therefore plays an important role in increasing the incidence of cardiovascular disorders and its related mortality and morbidity. Given the increasing prevalence of MS in general population, this study was designed to investigate the prevalence of MS in patients on Peritoneal Dialysis (PD) or Hemodialysis (HD).
Methods. A cross-sectional study on 170 dialysis patients was conducted in Al-Zahra Hospital in Isfahan, Iran. Blood samples for glucose, lipid profile, hemoglobin, albumin, Parathyroid Hormone (PTH), Calcium, Phosphorus and White Blood Cells (WBC) weretaken. Blood pressure, weight, height and waist circumference was measured by standard methods and information of patients were recorded in questionnaire.
Results. 67% of study group had MS. The prevalence of MS was more in females than males (77% in females vs. 57% in males). Prevalence was also more in PD patients than HD patients (73% in PD vs. 47% in HD patients). The highest prevalence in HD patients was seen in patients who were dialysed through a temporary catheter. The average of weight and Body Mass Index (BMI) and Albumin levels and WBC were significantly higher in patients with MS than non-MS, but the difference in hemoglobin, PTH, calcium and phosphorus were not statistically significant between MS and non-MS patients.
Conclusions. The prevalence of MS is high in dialysis patients especially in PD patients, and also in women more than men. It is necessary to diagnose, treat and fallow-up patients regularly with early risk factors of MS to prevent cardiovascular mortality and morbidity.

P224

The Effect of Oral Vitamin D on Serum Level of N-Terminal Pro-B-Type of Natriuretic Peptide in Peritoneal Dialysis Patients

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Introduction. The risk of cardiovascular disease in dialysis patients is higher than general population; on the other hand, vitamin D receptors exist in myocardium which inhibit cardiac hypertrophy. N-terminal pro-B-type Natriuretic Peptide (pro-BNP) is a neurohormone secreted by heart in response to increase in ventricular mass. The present study aimed to evaluate the effect of oral vitamin D on serum level of pro-BNP in Peritoneal Dialysis (PD) patients.
Methods. In a randomized clinical trial, PD patients whose serum 25-hydroxy vitamin D (25-OH D) level was less than 30 ng/ml enrolled the study. Eighty-fourPD patients (49 males and 35 females) were randomly divided into two groups (intervention and control). The intervention group received 50,000 units oral vitamin D weekly, for twelve weeks, if serum 25-OH D level was less than 10 ng/ml and for 8 weeks, if it was between 10 to 30 ng/ml. Patients in control group received placebo. Parathyroid Hormone (iPTH), Calcium (Ca), Phosphorus (P), 25-OH D, Albumin (Alb) and N-terminal pro-BNP serum level were evaluated before and after the study.
Results. The mean serum level of pro-BNP in patients receiving vitamin D and placebo, before the

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study was 879 pg/ml and 793 pg/ml, respectively. At the end of the study, it was 895 pg/ml and 736 pg/ml, respectively ($P = 0.7$). Mean serum level of 25-OH D in vitamin D and placebo groups before the study was 17 ng/ml and 19.5 ng/ml, respectively. At the end of the study it was 32 ng/ml and 13 ng/ml, respectively ($P = 0.001$). There were not statistically significant differences regarding other indices including Alb, Ca, P and iPTH between two groups.

Conclusions. Oral vitamin D used for the treatment of hypovitaminosis D did not change the serum level of pro-BNP in PD patients.

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The Effect of Omega-3 Fatty Acid Supplementation on Oxidative Stress in Continuous Ambulatory Peritoneal Dialysis Patients

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Introduction. End stage Renal Disease (ESRD) is a condition that inflammation and oxidative stress play an important role in damaging tissues, especially in vascular system. The effect of omega-3 fatty acids is well documented in some inflammatory diseases via Eicosapentanoic Acid (EPA) and Docosahexanoic Acid (DHA) components of fish oil. The aim of this study was to investigate the effects of dietary omega-3 fatty acid supplementation on levels of lipid peroxidation and oxidative stress in ESRD patients.

Methods. This randomized controlled double-blind clinical trial consisted of 90 patients on Continuous Ambulatory Peritoneal Dialysis (CAPD). One group was treated orally with 3 gram omega-3 per day for 8 weeks (n = 45) and the other matched group by placebo (n = 45). Serum levels of lipids, iron, ferritin, PT, PTT, Superoxide Dismutase (SOD) and reduced Glutathione (GH) were measured at the beginning and at 8 weeks.

Results. Our results showed that SOD and GH were not significantly changed in omega-3 group where lipid profile was showed no significant changes too. Erythropoietin requirements also had no significant differences.

Conclusions. To add omega-3 fatty acids to CAPD patients' diet had no beneficial effects on oxidative stress but need more evaluation.

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Does Peritoneal Equilibration Test Changes with Time in Continuous Ambulatory Peritoneal Dialysis Patients?

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Introduction. Peritoneal Dialysis (PD) patients are at increased risk of technique failure due to peritoneal membrane. Peritoneum in these patients has different characteristics of membrane transports including high, high average, low average and low transports, that affects on drainage of solutes and efficacy of PD and is assessed by Peritoneal Equilibration Test (PET). In this study, we evaluated PET characteristics of PD patients in Al-zahra university hospital in Isfahan, Iran.

Methods. The study was done retrospectively on adult Continuous Ambulatory PD (CAPD) patients (aged more than 18 years), no history of peritonitis, hospital admission or surgery in previous three months, with 3, 4 or 5 exchanges per day. PET was done by 2 liter of 2.5% peritoneal dialysis solution with a dwell time of 4 hours and samples for creatinine, urea and glucose taken at time zero, 2 hour and after 4 hours and serum sample for urea and creatinine at 2 hours after inflowing the PD solution was taken.

Results. In a retrospective study PET in 55 PD patients measured at zero, nine months and 3 years later. There were 21 (38%) female with mean age of 56 ± 13 years. PET results at first time were 1.8%, 16.4%, 29%, and 52.7%, for low, low-average, high-average and high, respectively. After nine months, PET changed to 3.6%, 9.1%, 21.8% and 64% for low, low-average, high-average and high,

respectively (P = 0.3). After 3 years, these values changed to 33.3%, 33.3%, 8.3% and 25% for low, low-average, high-average and high, respectively (P < 0.05).

Conclusions. Our study showed that PET in PD patients changes with time and it tends to go from high or high-average to the low or low-average and patients need to be reassessed for their peritoneal membrane transport characteristics.

P227

Randomized, Double Blind, Placebo Controlled Trial of Effect of Vitamin C Supplement on Anemia in Peritoneal Dialysis Patients

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Introduction. The first objective of this study was to determine plasma vitamin C level in Chronic Ambulatory Peritoneal Dialysis (CAPD) patients. The second objective of the study was to investigate the prevalence of vitamin C deficiency, its association with Hemoglobin (Hb) concentration and effect of vitamin C supplementation on hemoglobin concentration.

Methods. Sixty-six stable CAPD patients were evaluated in a cross-sectional study. Plasma samples were collected for vitamin C (analyzed by HPLC with electrochemical detection). Those with low vitamin C were divided randomely to active and placebo group. In active group, one 250 mg Ascorbic Acid tablets daily were given for 6 weeks. Blood samples were repeated for Hb and vitamin C after 6 weeks of treatment.

Results. Out of 66 CAPD patients who were eligible for the study, 67% of patients had low plasma vitamin C levels (< 4 μg/ml). Hb level did not have any correlation with plasma vitamin C levels (r = 0.142, P = 0.365). Forty-three patients (23 men and 19 women, mean age 54.19 years) with low vitamin C level were randomly divided into two groups. Hb rose significantly in those received vitamin C (10.9 ± 1.5 vs. 10.2 ± 1.2 g/dl; P = 0.021) but not in the placebo group (11.47 ± .58 vs. 11.0 ± .1.2; P = 0.165).

Conclusions. Our data shows the high prevalence of vitamin C deficiency in CAPD patients. Vitamin C supplementation could have a role in treatment of anemia in these patients.

P228

The First Report on Encapsulating Peritoneal Sclerosis in a Peritoneal Dialysis Patient in the World After Tetracyclin Pleurodesis

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Introduction. A 48 years old man with a history of 45 months on Peritoneal Dialysis (PD) was admitted. He is paraplegic withEnd Stage Renal Failure (ESRD) due to reflux nephropathy, with no history of diabetes. He has had only 2 episodes of peritonitis.

Case Report. His PD prescription was 2000 ml of 1.5% glucose solution four times a day with ultrafiltration of approximately 0.8 to 1 L/day. The last urine output was 1.2 L/day and adequacy parameters were: total urea Kt/V: 1.55/week, total CrCl: 61.3L/week and D/P Cr: 0.71. He had been on good condition until 1.5 months ago when he was admitted because of dyspnea and edema. CXR and laboratory findings support massive recurrent exudative right pleural effusion due to high output cardiac failure. So, pleurodesis with 800 mg Tetracycline was recommended. Only one week after procedure, he presented with nausea, intractable vomiting, vague abdominal pain and mass. Abdominal CT scan was unremarkable. Surgical exploration by an expert surgeon in peritoneal dialysis was recommended which showed early evidence of Encapsulating Peritoneal Sclerosis (EPS). EPS is a well-known complication of patients on long-term PD. These patients usually present with clinical picture of nausea, intractable vomiting, mass effect in the abdomen. The etiology of this problem is not well-known, but the possibility of a

second hit process is coded. Associated risk factors are long duration of PD, acetate in the dialysate, using antiseptics during bag exchange, beta-blockers and recurrent peritonitis almost in a patient with frank UFF. This patient has had none of the risk factors mentioned above and we did not expect him to present with EPS. Although we could not find any causal effect between pleurodesis and EPS in the literature, a probable cause and effect could be proposed.

Conclusions. The pathogenesis of EPS is a matter of debate with second hit phenomenon as a triggering role. This case not only brilliantly showed this factor, but also suggests a new accuser in this field.

P229

Experience of 7 Surgical Cases of Encapsulating Peritoneal Sclerosis in Tehran

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Introduction. Encapsulating Peritoneal Sclerosis (EPS) is a serious complication of long-term Peritoneal Dialysis (PD).Since December 2011, we have performed surgical enterolysis (Adhesiolysis), for EPS in 7 patients. One patient died after surgery, but the remaining 6 patients achieved symptomatic improvement.

Methods. All patients had undergone PD for between 48 and 94 months (average 68.4 months). During the course of PD, 3 patients developed EPS and were subsequently transferred to Hemodialysis (HD). The other 4 patients (57.1%) developed EPS after discontinuation of PD. PD has been continuing in the presence of EPS symptoms for 1 up to 6 months in 3 patients. Clinical presentation included nausea, vomiting, anorexia, weight loss and abdominal distention in all 7 patients. Four patients have history of repeated partial intestinal obstruction that 2 of them previously had been operated unsuccessfully, ended only with tube drainage. The average time from diagnosis of EPS and surgery was between 1 and 24 months (average 11 months).

Results. At laparotomy, a definitive diagnosis of EPS was established in all patients by the presence of clumped intestine cocooned with a dense sclerotic membrane. In all cases, the small intestine was completely released by ablation of the capsules, resulting in resolution of the bowel obstruction symptoms. Perforation of the small intestine was happened in 2 patients that overcome with simple suturing. The operating time varied from 150 to 250 minutes (average 187 minutes). Oral food intake was initiated 6 - 15 days (average 10.7 days) after surgery. One patient, died 9 days after surgery with unknown sepsis without any signs or symptoms of intraperitoneal leakage or abscess. The remaining 6 patients were followed for between 2 and 16 months (average 9.5 months). All patients except the expired one underwent total parenteral nutrition 1-2 weeks before and after operation. During follow-up, our patients have not experienced a recurrence of bowel obstruction symptoms.

Conclusions. Surgical treatment of 7 patients with EPS produced successful outcomes in all but 1 patient (85.7% success). EPS should be actively treated by surgeons who genuinely understand this pathologic condition.

P230

Risk Factors of Rapid Decline of GFR in Continuous Peritoneal Dialysis Patients

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Introduction. A positive impact of Renal Residual Function (RRF) on survival and quality of life of dialysis patients has been determined. The aim of this study is to evaluate factors which can influence on RRF in Continuous Ambulatory Peritoneal Dialysis (CAPD) patients.

Methods. A retrospective cohort study was performed on 86 CAPD patients. The patients were divided in two groups.Group A patients had a Glomerular Filtration Rate (GFR) loss of more than 50% during three years and Group B who hadno GFR loss of more than 50%. Some probable risk factors such as age, sex, Body Mass Index (BMI), hypertension, Diabetes Mellitus (DM), frequency of peritonitis, Ca, P, Ca × P, mean of Parathyroid Hormone (PTH), comorbidity, and cause of renal

failure were compared between two groups.

Results. Twenty-eight percent of patients had a GFR loss of more than 50%. 37% of women had GFR loss compared to men (18%, $P < 0.05$). Patients with GFR loss had higher mean of Ca, P, and Ca × P compared with no loss of GFR [9.5 ± 1.19 vs 8.9 ± 0.89 mg/dL, $P < 0.05$; 4.7 ± 1.24 mg/dL vs 4.2 ± 0.92 mg/dL, $P < 0.05$; 45 ± 14 vs. 37 ± 8.8 mg/dl, $P < 0.01$]. There were no significant differences between two groups regarding age, BMI, hypertension, DM, frequency of peritonitis, mean of PTH, comorbidity, and cause of end stage renal disease.

Conclusions. A GFR loss of more than 50% is common condition in CAPD patients. Female gender, higher Ca, P and Ca ×P are risk factors of rapid loss of GFR.

Second Day

ABSTRACTS

Third Day

Friday, February 14

O601

High-Flux Versus Low-Flux Filters, Comparing Clinical Findings in Chronic Hemodialysis Patients

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Introduction. High-Flux (HF) filters are a type of dialyzers with larger pore size in order to remove solutes and uremic toxins with larger molecular weights. It has not yet well known that HF filters have any effect on anemia, calcium and nutritional parameters as well as dialysis adequacy.
Methods. We analyzed the data of Fars Hemodialysis Registry and included chronic Hemodialysis (HD) patients of at least 6 months duration. We included the mean values of blood findings, HD adequacy and nutritional parameters of a 6 months period for every patient during year 2012.
Results. We analyzed the data of 398 patients, 96 (24%) in HF group and 302 (76%) in Low-Flux (LF) group. Females were 16 (16%) and 175 (58%) in HF and LF group, respectively. The mean age of HF group was 55 ± 15 and LF group 58 ± 16 years ($P = 0.071$). Patients in HF group had significantly higher Body Mass Index (BMI) (24.6 ± 4 vs. 21.1 ± 4; $P < 0.001$). With higher blood flow rates (294 ± 26 vs. 271 ± 27; $P < 0.001$), patients in HF group had lower Kt/V (1.2 ± 0.1 vs. 1.3 ± 0.2; $P < 0.001$). The mean values for Blood Urea Nitrogen (BUN) (63 ± 9 vs. 58 ± 12 mg/dl; $P < 0.001$), Creatinine (8.8 ± 2 vs. 6.9 ± 2 mg/dl; $P < 0.001$), Albumin (4.1 ± 0.3 vs. 3.9 ± 0.4 g/dl; $P = 0.01$) and Hemoglobin (11 ± 1.1 vs. 10.6 ± 1.4 g/dl; $P < 0.001$) were higher in HF group. Net protein catabolic rate was not different between two groups (1.9 ± 0.5 in HF and 1.9 ± 0.6 in LF group; $P = 0.88$).
Conclusions. Patients undergoing HF dialysis have higher BMI which could be due to selection of this type of dialyzers for patients with higher weights by nursing staff. Lower Kt/V despite higher blood flow rates can be explained by higher BMI in patients with HF filters. Patients in HF group had higher Hemoglobin and Albumin levels which could be due to removal of lager molecules and cytokines resulting in less inflammation.

O602

Quantiferon TB Gold Assay Agreement with Tuberculin Skin Test in Pretransplant Screening of Latent Tuberculosis in a High Prevalence Country

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Introduction. Tuberculosis (TB) reactivation is one of the significant complications after transplantation. Tuberculin Skin Test (TST) despite high errors has been the major available TB screening test in End Stage Renal Disease (ESRD) patients. Recently, Interferon Gamma Release Assay (IGRA) has been approved as a substitution test in diagnosis of Mycobacterium Tuberculosis infection. There are limited studies to assess the efficacy of IGRA in Hemodialysis (HD) patients who are candidates for kidney transplantation, especially in countries with high prevalence rate of TB. We organized this study to compare the ability of TST and IGRA in diagnosis of latent tuberculosis in our HD patients by considering different risk factors.
Methods. Forty-seven HD patients in Firoozgar Hospital were included. Demographic data and blood samples were collected from patients. Chest X-Ray, IGRA test and standard TST were done.
Results. There were 47 patients with mean age 51.3 ± 15.9 year old and 31/16 male to female ratio. QuantiFERON Test (QFT) and TST were positive in 11 (23.4%) and 20 (43.5%), respectively. The agreement between QFT and TST was 0.31 ($P < 0.05$). Positive TST were correlated to male gender and abnormal chest X-Ray in univariate analysis ($P < 0.05$). Diabetes Mellitus was a risk factor for positive QFT ($P < 0.01$).
Conclusions. IGRA test is not a sensitive test for detection of latent TB in HD patients in high prevalence area .We suggest that assessment of cellular immunity response in ESRD patient should be a priority before reliance on IGRA test result.

O603

Growth Arrest-Specific 6 Protein as Pro-Inflammatory Correlates Inversely

45

Third Day

to Matrix-Gla Protein as Vascular Calcification Inhibitor in Hemodialysis patients

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Introduction. Plasma Growth arrest-specific 6 (Gas-6) protein and Matrix -Gla Protein (MGP) are crucial mediators of vascular calcification and are involved in the development of vascular complications which may be relevant in Chronic Kidney Diseases (CKD). We set out to determine whether between plasma Gas-6 level and MGP exists relationship.

Methods. A total of 92 adults including 46 suffering from end-stage renal disease on maintenance Hemodialysis (HD) and 46 with normal kidney function were recruited. Plasma Gas-6 and MGP concentration and biochemicals were quantified.

Results. Significant increased level of Gas-6 was found in HD patients compared with normal controls ($P = 0.000$). In HD patients, MGP levels were lower than the controls ($P = 0.000$). The level of Gas-6 was inversely correlated with MGP (r = -0.341, $P = 0.021$) in HD.

Conclusions. Our study for the first time showed that serum Gas-6 is increased and MGP is decreased in HD. The level of Gas-6 was inversely correlated with MGP. The direct role of this relationship on vascular calcification requires further studies.

Third Day

P301

Peritoneal Dialysis in Patients with Autosomal Dominant Polycystic Kidney Disease

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Introduction. Autosomal Dominant Polycystic Kidney Disease (ADPKD) is one of the common causes of End Stage Renal Disease (ESRD). There are always some concerns regarding use of Peritoneal Dialysis (PD) as a choice of renal replacement therapy in these patients.

Methods. We analyzed the data of Iranian PD registry and retrospectively investigated all patients who were on chronic PD from 2000 to 2012.

Results. A total of 2369 PD patients were included in which 91 (3.8%) patients had ADPKD and 50 (54%) were female. The mean age of ADPKD patients was 56 ± 17.9 years compared with 56 ± 17.6 in non-ADPKD subjects. The mean values for weight and Body Mass Index (BMI) were 62 ± 11 Kg and 23 ± 3, respectively in ADPKD which was not significantly different from patients without ADPKD ($P = 0.80$ and 0.86). Other findings with no significant differences between two groups were systolic (135 ± 22 mmhg) and diastolic (80 ± 11 mmhg) blood pressures ($P = 0.86$ and 0.81). The amount of 24 hours ultrafiltration was 918 ± 525 and 938 ± 587 milliliters for patients with and without ADPKD ($P = 0.45$). While mean values for peritoneal creatinine clearance was not different in ADPKD and non-ADPKD patients (51 ± 12 and 51 ± 12 liter/week, $P = 0.4$), peritoneal Kt/V was higher in ADPKD patients (1.6 ± 0.3 vs. 1.5 ± 0.5 per week, $P = 0.014$). In analysis of 129 PET results in ADPKD patients, high, high-average, low and low-average values were obtained in 50, 63, 6 and 10 patients. While the baseline values (before starting PD) was not different in both groups, ADPKD patients had higher hemoglobin (11.3 ± 2 g/dl), calcium (9.1 ± 0.8 mg/dl) and phosphorus (4.9 ± 1

mg/dl) levels following starting PD ($P < 0.001$, $P = 0.017$ and $P = 0.003$, respectively). In terms of peritonitis, 85 episodes of peritonitis occurred in ADPKD patients with Streptococcus (7 episodes, 8%) had highest prevalence and 54 (63%) negative cultures.

Conclusions. PD could be a suitable choice of renal replacement therapy in patients with ADPKD.

P302

The Effect of Tai Chi Exercise on Quality of Life in Haemodialysis Patients

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Introduction. Today, despite remarkable advances in the care of Haemodialysis (HD) patients, the quality of life for these patients is still unsatisfactory. Although previous reports confirmed the effect of exercise on renal patients' well-being, less than 50% of end stage kidney patients still participate in a regular sport program. Tai chi is a slow and gentle exercise that is suitable for people with chronic illnesses and those with severe exercise intolerance. Therefore, this study aimed to determine the effect of Tai Chi exercise on quality of life of HD patients.

Methods. This was a quasi-experimental study conducted in a single group and two-step. Twenty-five HD patients, admitted to hospitals in Isfahan, were selected, and their quality of life was compared before and after intervention in two domains of satisfaction and importance. The sampling was convenience. The subjects were informed about the intervention in a single session of Tai Chi exercise class for one hour weekly, for 12 weeks, with a training Compact Disc (CD) that offered the patients to perform exercise at least twice weekly at home. Data were collected by completion of demographic characteristics form and a researcher made quality of life questionnaire adopted from Ferrans and Powers dialysis version, and KDQOL-SF questionnaire by the researcher. The data were analyzed by paired t-test through SPSS-18.

Results. Data analysis showed that there was a statistical significant difference in four dimensions of health and functioning before and after intervention ($P < 0.001$), socio-economic ($P < 0.001$),

psychological - spiritual ($P < 0.001$) and family with ($P = 0.002$ in the satisfaction domain and $P = 0.008$ in the importance domain as well as the total score of quality of life in both domains ($P < 0.001$).

Conclusions. According to the research findings, Tai Chi exercise improves quality of life score significantly in whole dimensions, and adding Tai Chi classes to rehabilitation program of HD patients can have a positive effect including improved quality of life. Therefore, this study supports other researchs results that showed Tai Chi positive effects on the quality of life.

Trend of Vascular Access Use in Hemodialysis Patients in Isfahan between 2003 to 2013

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Introduction. Vascular Access (VA) complications remain the leading cause of morbidity in Hemodialysis (HD) patients and account for high healthcare costs. Thus, this study was designed to evaluate the profile of VA use for HD in our dialysis units in 2013 and compare with this profile in 2003.
Methods. A descriptive cross-sectional observational study conducted on January to March 2013, in 7 dialysis units. We evaluated all patients were on dialysis for at least one month. The patients data about VA type, number and survival and some demographic variables were collected and compared with data collected on year 2003 at all dialysis units in our city.
Results. The mean age of patients was 57.71 ± 14.92 years old (range 18 to 91). Out of 536 studied HD patients, 30.1% initiated dialysis with a temporary catheter, 34.5% with a permanent catheter (permcath) and 35.4% with an Arterio-Venous Fistula (AVF). Among 951 permanent access used during dialysis, 48% were AVF, 3.3% graft and 49% were permcath. One, two, three and five year AVF survival was 79.4%, 61.2%, 47.3% and 31.5%, respectively.
Conclusions. Mean age of patients and mean duration of HD increased during these years.

The main finding of this study was a significant decrease in the proportion of AVFs and an increase in the proportion of Tunneled Catheters (TC) at both time, starting dialysis and during dialysis, from 2003 to 2013. Conversely, a decreased use of temporary catheters at the initiation and during HD was also noted in our study. Use of graft slightly increased from 2003 to 2013 but remained still at very low level.

The Effect of Gabapentin on Muscle Cramps During Hemodialysis: a Double Blind Clinical Trial

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Introduction. HemodialysisAssociated Muscle Cramp (HAMC) is a common complication during Hemodialysis (HD) sessions. A number of pharmacologic agents have been evaluated to prevent and or diminish HAMC; however, none of them has an established role. To our knowledge, this is the first study which has evaluated the possible effect of Gabapentin on HAMC.
Methods. In a double blinded clinical trial, we compared the possible effect of Gabapentin with a placebo in prevention and or diminish episodes of HAMC in HD patients who had experienced frequent intradialytic muscle cramps. At the first time, placebo was given before each dialysis session for 4weeks and then after 2weeks washout period, 300 mg of Gabapentin was given before each HD session for 4weeks to verify the effect of Gabapentin on HAMC.
Results. Overall, fifteen patients (7 men, 8 women; mean age, 52.02 years) with frequent intradialytic muscle cramps were enrolled in the study. The incidence of symptomatic muscle cramp decreased in the Gabapentin group compared with placebo group with a significant difference between them ($P = 0.001$). The intensity of muscle cramps are also decreased in the Gabapentin group ($P = 0.001$). There was no significant association between HAMC in male and female ($P = 0. 397$), mean age of HD patients ($P = 0.226$) and cause of end-stage

renal failure (P = 0.551).

Conclusions. These results indicate that compared with placebo, Gabapentin prescription before each HD session is significantly associated with a decrease incidence of intradialytic muscle cramps and it also can reduce intensity of HAMC.

P305

Efficacy of Folic Acid and Folinic Acid on Plasma Homocysteine Concentration in Hemodialysis Patients

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Introduction. Hyperhomocysteinemia is a cardiovascular risk factor that is more common in patients with Chronic Renal Failure (CRF). Several medications are used for management of Hyperhomocysteinemia such as Folic Acid, Folinic Acid or vitamins B.In this study, we have evaluated the efficacy of Folic Acid and Folininc Acid on plasma homocystein concentration in Hemodialysis (HD) patients.

Methods. Patients with CRF referred for HD and underwent dialysis for at least 6 months were evaluated. Patients were treated by vitamin B12 and 5 mg Folic Acid for one month, then primary serum vitamin B12 and Folic Acid and homocystein level and serum biochemistry were assessed. Then patients were divided into two groups: the first group was treated by 15 mg Folic Acid for 8 weeks and the second group was treated by 15 mg Folinic Acid for the same duration. Finally, all laboratory evaluations were repeated again after two-month treatment period.

Results. Patients were treated in two groups with 20 cases in each one. Age, sex and primary serum homocystein level was almost the same in both groups.After two months treatment, serum homocystein level was 9.5 µmol/l in Folinic Acid group and 14.1 µmol/l in Folic Acid group showing a significantly lower in those who were treated by Folinic Acid.

Conclusions. Folinic Acid is a more potent and effective drug for treatment of hyperhomocysteinemia

in HD patients compared to Folic Acid.

P306

Renal Lymphangiectasia Presented with Pleural Effusion and Ascites

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Introduction. Renal lymphangiectasia is a rare disorder of kidney lymphatic system. Fifty-six cases have been described up to now. The exact etiology is unknown. Some associations with this disorder have been reported. Hereby, we report a case of renal lymphangiectasia presented with ascites and pleural effusion associated with hepatitis C virus infection in a smoker and intravenous drug user male.

Case Report. A 24 year-old man presented with abdominal distension and exertional dyspnea during last month. Physical examination was normal except for focal swelling palpable in left lower quadrant of abdomen. Ultrasonography and Computed Tomography (CT) of abdomen revealed moderate ascites and enlarged kidneys with increased corticomedullary differentiation. Lung and abdominopelvic CT showed left-sided pleural effusion and fluid in perinephric, retroperitoneum, extraperitoneal pelvis and presacral area and soft tissue edema in anterior lower abdominal wall. Abnormal laboratory tests were Hemoglobin (19.7mg/dl), Alanine Transaminase (105 IU/lit). Urea and serum creatinine level were normal. HCV antibody and reverse transcriptase polymerase chain reaction for hepatitis C were positive. Pleural

effusion and perinephric fluid were transudative and lymphocyte-dominant and negative cytology for malignancy. According to clinical, imaging and laboratory investigations, the diagnosis of renal lymphangiectasia was made. The therapeutic plan was initiation of diuretic to avoide of more fluid sequestration in third spaces; however, risk of thrombosis due to association of severe polycythemia deterred us and he discharged with close follow-up and conservative management. Three months later, 800 ml pleural fluid was drained owing to increased dyspnea.

Conclusions. The diagnosis of renal lymphangiectasia is based on imaging and treatment is usually conservative. Some associations have been reported with renal lymphangiectasia, but these 2 problems that were in association with this case (Hepatitis C Virus infection and heroin abuse) have not been reported to date.

P307

Comparison of Prevalence of Angiotensin Converting Enzyme Gene Polymorphism in Hemodialysis Patients with Normal Cases

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Introduction. Insertion /deletion (I/D) polymorphism of Angiotensin Converting Enzyme (ACE) gene that lead to increase ACE activity could increase cardiovascular mortality in diabetic patients and probably in Hemodialysis (HD) patients. This study aimed to evaluation of ACE gene polymorphism in HD patients compared to normal cases.

Methods. In a cross-sectional study 110 HD patients with at least 3 months duration of dialysis and 110 normal cases were enrolled. Two groups of patients were matched based on age and sex. Due to non-cooperation, death or transplantation, two patients of each group were excluded from the study, so the study was continued in 98 individuals of case and control groups. Data were collected and analyzed using SPSS-16.1.

Results. There is no significant correlation between ACE gene polymorphism and age or gender in HD patients. Significant difference was found between prevalence of case and control groups ($P = 0.012$). Distribution of ACE gene polymorphisms in HD patients was DD = 61.8%, ID = 37.3%, II = 0.9%, and in control group was DD = 42.7%, ID = 53.6%, II = 3.6%. Frequency of D and I allele was 80.45% and 19.54% in HD patients and 69.54% and 30.45% in controls.

Conclusions. I/D polymorphisms of ACE gene in HD patients showed higher prevalence than controls, so this gene polymorphism may have a role in progression of renal failure in chronic kidney disease.

P308

Angiotensin Converting Enzyme Gene Polymorphism Strongly Correlated with Autosomal Dominant Polycystic Kidney Disease in Hemodialysis Patients

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Introduction. Autosomal Dominant Polycystic Kidney Disease (ADPKD) is the most common hereditary cystic diseases of kidney. ADPKD is characterized by bilaterally enlarged kidneys with multiple cysts in cortex and medulla. Insertion/ deletion (I/D) polymorphism of Angiotensin Converting Enzyme (ACE) gene may have a role in development or progression of ADPKD. The aim of our study was comparison of prevalence of ACE gene in ADPKD disease with other Hemodialysis (HD) patients.

Methods. I/D polymorphism of ACE gene was checked by PCR method in 110 HD patients with at least 3 months duration of dialysis. The causes of renal failure in the patients were evaluated by history taking, familial history, sonography and laboratory findings. Data were collected and analyzed with SPSS-16.1.

Results. Mean age of patients was 57.61 ± 15.96. Gene polymorphism of II, ID and DD were in 1, 41 and 68 HD patients, respectively. There was no association between frequency of gene

polymorphism and age or sex ($P > 0.05$). There were 10 ADPKD patients that all of them had DD genotype ($P < 0.01$).

Conclusions. Based on our results, there was strong association of DD genotype of ACE gene and development and probably progression to end stage renal disease in ADPKD patients.

P309

A Randomized Pilot Trial on the Effect of Granulocyte-Colony Stimulating Factor (G-CSF) on Antibody Response in Hemodialysis Patients Who Had No Response to Routine HBV Vaccine

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Introduction. Patients suffering from End Stage Renal Disease (ESRD) who are on maintenance Hemodialysis (HD) are at increased risk of Hepatitis B Virus (HBV) infection. HBV infection becomes chronic in 30-60% of HD patients compared with less than 10% in non-uremic patients. The present study was designed to compare the seroconversion rate of HD patients who had no response to 3 Intramuscular (IM) doses (40 μg each) of HBV vaccine (Heber Biovac, Herber Biotec, Havana, Cuba).

Methods. Twenty-six HD patients who had no response to 3 IM injections of HBV vaccine were randomly divided into 2 groups, group 1 received a booster dose of 40 μg HBV vaccine IM, and group 2 received a booster dose of 40 μg HBV vaccine IM plus 5 μg/kg subcutaneous Granulocyte Colony Stimulating Factor (G-CSF). Antibody against Hepatitis B Surface (HBS) Antigen was measured 1 month after the booster dose.

Results. Seroconversion rate in group 1 was 40%.

There was a trend towards a higher seroconversion rate at 60% in group 2; however, because of the small number of patients it did not reach statistical significance.

Conclusions. Larger number of patients and other innovative strategies should be applied for vaccination of this group of patients. More prolonged follow-up of the patients is required to evaluate the duration of protection induced by each method of vaccination.

P310

The Effectsof Dietary Supplementation with Alpha-Lipoic Acid and Vitamin E, Individually and Combined, on Insulin Resistance and Lipid Profile in Hemodialysis Patients

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Introduction. Due to their antioxidant properties, Vitamin E (Vit E) and Alpha-Lipoic Acid (ALA) may have a protective role against Cardiovascular Disease (CVD) risk factors, e.g., Insulin Resistance (IR) and dislipidemia, in Hemodialysis (HD) patients.The main objective of this study was to determine the effects of dietary supplementation with ALA and Vit E, individually and combined, on insulin resistance and lipid profile in HD patients.

Methods. This study was a randomized clinical placebo-controlled trial, including 85 patients (45 men and 40 women) from Shiraz HD centers. We examined the effects of a 2-month daily supplementation with VitE (400IU) and ALA (600mg), individually and combined, on Fasting Blood Sugar (FBS), insulin, the HOMA index, and lipid profile (serum total, VLDL-, LDL- and HDL Cholesterol, and Triglycerides). A placebo group was also included in the study.At the beginning and at the end of the intervention, weights and heights of the patients were measured, Body Mass Index (BMI) was calculated, dietary intake assessed,

and blood samples were taken for analysis.

Results. Significant reductions were observed in mean FBS (4.2), insulin (10.4) and the HOMA index (1.5) in the ALA + Vit E-supplemented group compared to the placebo group (P-values = 0.02, 0.006, and 0.002, respectively); changes in these parameters were not statistically significant in the groups supplemented with either one alone. Also, supplementation with Vit E or ALA, either alone or combined, had no statistically significant effects on lipid profile.

Conclusions. Combined supplementation with Vit E and ALA can improve insulin resistance in HD patients.

P311

Correlation of Plasma Levels of Leptin and Ghrelin with Nutritional Status of Hemodialysis Patients

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Introduction. Malnutrition is a common phenomenon in patients with chronic renal insufficiency. We determined the serum levels of two hormonal regulatory factors affecting nutrition in patients with chronic renal insufficiency and matched it against the subjective global assessment score for nutrition and albumin.

Methods. This was a cross-sectional study based on data collected from 70 patients on Maintenance Hemodialysis (MHD). Components of the SGA questionnaire were filled out and taken blood samples were later analyzed. A total of 70 (39 male and 51 female) hemodialysis patients were included in this study. Data on age, duration of dialysis, body mass Index, serum leptin, ghrelin, and albumin was acquired and later analyzed. Beside leptin values, which proved to be higher in female patients, there were no significant differences between the sexes. Patients were categorized in

two groups according to their SGA scores: 1) well-nourished (score: 6-12) and 2) mildly to severely malnourished (score: 13-30).

Results. Only leptin values were significantly different between two groups (P-value < 0.001).

Conclusions. In conclusion, it seems that elevated leptin levels do correlate with established markers of malnutrition in patients on MHD.

P312

Assessment of Correlation of Renal Fraction Excretion of Sodium with Spirometric and Gasometric Parameters in COPD patients

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Introduction. Theoretically, both hypoxaemia and hypercapnia could alter urinary excretion of sodium in patients with Chronic Obstructive Pulmonary Disease (COPD). Very few and conflicting data exist with respect to measurement of fraction excretion of sodium in patients with COPD. So in this study, we have investigated the relationship between renal Fraction Excretion of Sodium (FENa) with gasometrical parameters in COPD.

Methods. The study group consisted of 40 stable outpatients with COPD. We investigated the relationship of renal FENa with gasometrical parameters including HCO3, PH, P aCO2and P aO2, in COPD patients.

Results. Mean age was 65 ± 10 years and female to male ratio was 0.28. A low renal FENa of less than 1% was present in27%. There was a significant, positive relationship between renal FENa and P aO2 ($P = 0.005$, r = -0.456). This correlation was not seen, with P aCO2, HCO3 and pH. In agreement with previous evidence, it seems likely that kidneys of patients with COPD are in a sodium retaining state particularly in the presence of hypoxaemia. However, our results are in contrast with the fact that hypercapnia contributes to sodium retention in COPD.

Conclusions. This study indicates that in COPD

patients, P aO2 but not P aCO2 is related to renal FENa, which shows the probable role of hypoxemia on sodium output in COPD patients. However, some caution is needed in the interpretation of the probable role of hypercapnia on sodium retention in COPD.

P313

Prevalence of Nose and Hand Methicillin-Resistant Staphyolccoccus Aureus (MRSA) in Hemodialysis Staff Before and After Intervention

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Introduction. Hemodialysis (HD) patients are at increased risk of infection due to hematogenous transmission of microorganism during HD through contaminated devices, surfaces and especially HD staff's hands. Since there was nostudy about the prevalence of Methicillin-Resistant Staphylococcus Aureus (MRSA) in our HD patients and personnel, we decided to evaluate the prevalence of MRSA in them, before and after intervention.
Methods. In an analytic prospective quasi-experimental study done before and after the intervention, in 2006 and 2011, all HD patients and personnel in Al-zahra university hospital enrolled the study. Of HD patients and personnel, one skin and nasal sample were taken for MRSA before and after educational, technical and struchural interventions, and all samples thereafter cultured immediately. Finally data analyzed using student t-test, fisher's exact and qui-square tests.
Results. Before the intervention, 65 persons and after that 42 persons participated. The mean age for personnel and patients were 38 and 54 years old, respectively. Before intervention, hand culture for MRSA in personnel and patients was 14% and 9%, respectively.Following intervention it was 0% and 3.8%, respectively ($P < .001$). Nose culture for MRSA in personnel and patients were 5% and

9%, respectively (before) and it was 0% in both groups (after), $P < .001$. There was not any relation between duration of dialysis and inhabitation in city or outside the city with MRSA colonization. **Conclusions.** Prevalence of nose and hand MRSA carriage decreased in our HD patients by education and using health precautions.

P314

Uremic Pruritus in Hemodialysis Patients: Treatment with Gabapentin Versus Ketotifen

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Introduction. Uremic pruritus is common among Hemodialysis (HD) patients. Effective treatments are not readily available. Early evidence with antihistamines and Gabapentin indicate variable effects. In other hand, H1-receptors are mostly involved in this type of pruritus. Other reasons for pruritus are uremic skin, rectus hair muscles hypertrophy, sebaceous and sweat glands atrophy, secondary hyperparathyroidism, skin PH, ion disorders, Vit A hypervitaminosis, iron deficiency anemia, peripheral neuropathy, allergy, bile acids and dialysis liquid hypersensitivity. Early evidences with Ketotifen vs. Gabapentin are not so reliable to be taken into consideration.
Methods. In this cross-sectional study, 52 patients undergoing maintenance HD at dialysis unit of 5-Azar hospital, Gorgan, Iran after consenting were enrolled. HD was as an inclusion criteria and the skin disease that makes pruritus was as an exclusion criteria. They were divided into 2 different groups as Gabapentin (100 mg daily) and Ketotifen group. The ketotifen group was also divided in two separate groups (A, B), each with 13 patients. Group A received 1mg twice a day and group B 1mg daily. These groups were treated for 2 weeks. The «shiratori criteria» (0 as no pruritus to 4 as severe pruritus) has used to measure the pruritus levels before and after therapy. Two main groups have been matched in terms of anemia and hyperparathyroidism.
Results. In the group treated with 100mg Gabapentin, 13 patients (52%) had no pruritus, 9 patiets (36%) had low level pruritus and 3 patients

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(12%) had no decrease in pruritus. In general, the group treated with Ketotifen, 12 patients (50%) had no pruritus, 6 patiets (25%) had low level pruritus and 6 patients (25%) had no decrease in pruritus. In the group treated with 1 mg Ketotifen, 5 patients (38%) had no pruritus, 4 patiets (31%) had low level pruritus and 4 patients (31%) had no decrease in pruritus. In the group treated with 2 mg Ketotifen, from 11 patients, 7 patients (64%) had no pruritus, 2 patiets (18%) had low level pruritus and 2 patients (18%) had no decrease in pruritus. **Conclusions.** This study shows that there is no significant difference between Ketotifen and Gabapentin on pruritus that happens daytime (P = 0.481) and it shows a near significant difference on pruritus happens at nights (P = 0.077). It seems that further studies are necessary to make this difference more clear.

P315

Report on Three Cases of Posterior Reversible Encephalopathy Syndrome in Children with Hypertension

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Introduction. Posterior Reversible Encephalopathy Syndrome (PRES) is a clinico-radiologic condition that typically demonstrates symmetric occipito-parietal vasogenic edema on CT and MR imaging and characterized by acute onset of headache, vomiting, altered consciousness, seizures and focal neurological deficits. Several factors appear to play a role in the pathogenesis of PRES, including severe high blood pressure, immunosuppressive therapy, renal failure, eclampsia,, and lupus. Low magnesium levels can augment PRES. The vasogenic edema typically resolves over a period of days to weeks if the underlying abnormality is promptly corrected.
Methods. Three cases are here reported from patients who admitted in Department of Pediatrics, Sheikh Hospital, Mashhad, Iran.
Results. We report two children 4 and 1 years old with atypical Hemolytic Uremic Syndrome (HUS) with acute renal failure and microangiopathic hemolytic anemia.The third case is a 7-month infant with reflux nephropathy and chronic kidney disease

who admitted in the pediatric nephrology ward with tonic clonic seizures and focal neurological signs (hemiplegia) with no alteration in consciousness due to severe hypertension (systolic and diastolic blood pressure more than 99 percentile for age and gender). Serum electrolytes levels (serum Ca, Na, Mg) were normal in all. PRES documented on CT, MRI and neurologic consultation.Neurologic symptoms and signs resolved during one month by blood pressure controls.Despite no neurologic sequel, the case with reflux nephropathy died about 3 months later (sudden death during sleeping).
Conclusions. The treatment of PRES depends on underlying cause. This disorder has nospecial therapies and conservative treatment of underlying disease (such as blood pressure control) usually results in complete recovery and the disorder often has favorable neurologic outcome. Although In our cases patients with reflux nephropathy died 3 months after recovery of neurologic symptoms, it appears that other complication of renal failure such as severe metabolic acidosis and uncontrolled volume overload were responsible for sudden death.

P316

Relationship Between Hypogonadism and Arteriovenous Fistulas Dysfunction in Men with End Stage Renal Disease

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Introduction. Risk factors for Arteriovenous Fistula (AVF) failure include inadequate anatomy, obesity, increasing age, female gender, medical conditions such as heart failure, and Diabetes Mellitus (DM). Androgen deficiency is a common problem in men with End Stage Renal Disease (ESRD) and it is associated with endothelial dysfunction. The aim of this study was to evaluate the effect of hypogonadism on maturation of AVF in men with ESRD.
Methods. A prospective cohort study was conducted on 86 men with ESRD. The patients divided into two groups, hypogonadal males (total testosterone < 3.5 ng/ml) and non- hypogonadal males (total testosterone ≥ 3.5 ng/ml). The patients

were followed for one year. Primary end-point was AVF dysfunction after maturation and Cannulation. Some confounding variables such as Body Mass Index (BMI), age, and DM were measured and compared between two groups.

Results. The mean serum testosterone concentration was 4 ± 2.5 ng/ml (0.8-12.8 ng/ml). Thirty-nine patients (45%) had hypogonadism. In two groups, there were no significant differences regarding some variables such as BMI, age, and DM. Hypogonadism group had more frequency of AVF dysfunction compared with non- hypogonadism group (40% vs. 18%, OR:2.4, CI:1.2-6.8, $P < 0.05$).

Conclusions. Low testosterone level increases risk of AVF dysfunction in men with ESRD. Further clinical trails should be performed to confirm this effect.

P317

Correlation Between Hypovitaminous D and Complication of Hypertension in Postmenopausal Women

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Introduction. Vitamin D deficiency is common in elderly women. There is a negative correlation between vitamin D and blood pressure. However, there is few data regarding vitamin D deficiency and complication of hypertension. The study was aimed to evaluate vitamin D status and complication of hypertension in postmenopausal women with primary hypertension.

Methods. A cross-sectional study was performed on 168 postmenopausal women with primary hypertension. Patients were divided in two groups, hypovitaminous D (vitamin D < 20 ng/dl) and normovitaminous D (vitamin D ≥ 20 ng/dl). Complications of hypertension such as Left Ventricular Hypertrophy (LVH), renal failure, microalbuminuria were compered between two groups.

Results. Eighty (47%) patients had hypovitaminous D. There were no differences regarding age, Body Mass Index (BMI), duration of menopause, duration of hypertension and prevalence of diabetes between two groups. The prevalence of microlbminuria was 21% in hypovitaminous D compared with 8% in normovitaminous D group (OR: 4.1, CI: 2.8-4.9, $P < 0.01$). The frequency of LVH was 60% in hypovitaminous D compared with 40% in normovitaminous D group (OR:1.8, CI: 0.95-3.5, $P = 0.06$). The mean of serum creatinine was not significantly different in two groups (0.91 ± 0.17 in hypovitaminous D vs. 0.91 ± 0.18 in normovitaminous D, $P > 0.05$).

Conclusions. Hypovitaminous D is more common in hypertensive postmenopausal women. Hypovitaminous D is associated with more complication of hypertension such as microalbuminura and LVH in hypertensive postmenopausal women. Further studies are needed to confirm this correlation.

P318

What Is the Best Parametric Survival Models for Analyzing Hemodialysis Data?

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Introduction. Various statistical models are used for survival analysis with different clinical values in Hemodialysis (HD) patients. In this study, we aimed to compare the results of the survival analysis of a cohort of patients receiving HD using Weibull, Gamma, Gompertz, Log-Logistic and Log-Normal parametric models.

Methods. Data of 556 patients under HD in Hasheminejad Kidney Center from 2004 to 2013 where obtained from HD Data Processor Software (HDPS). The patients were divided into two groups according to their survival risk factors. Patient with age more than 65 and/or with at least one chronic, comorbid disease (cardiovascular comorbidity, cerebrovascular comorbidity, physical disability, chronic infection, malignancy, hepatic failure) were classified as the high risk group. The Log rank test was applied to compare the survival curves of the two groups obtained by Kaplan Meier method. A

survival analysis was conducted by using Weibull, Gamma, Gompertz, Log-logistic and Log-normal distribution of parametric models. In the analysis of the survival periods using parametric models, the age variable was taken as the covariate. To determine the best model among parametric models, Akaike Information Criteria (AIC) was exploited.

Results. Survival curves of two groups were compared by using a log-rank test and there was a statistically significant difference between two groups, with patients in high risk group having a lower median survival compared 8.18 months ± 3.62 months versus 105.4 ± to low risk group (38.267 $P < 0.001$). Among the different methods, the survival model found by the Gamma distribution was the most appropriate one with the lowest AIC value.

Conclusions. Although the AIC values for the five distributions were very close to each other (spatially log logistic and Gama), the Gama distribution, which had the lowest AIC value, was determined as the most suitable model.

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Can We Achieve Targets in Mineral Metabolism and Anemia Control in Hemodialysis Patients?

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Introduction. Mineral metabolism and anemia state are important predictors of morbidity and mortality in dialysis patients. Kidney Disease Outcomes Quality Initiative (K/DOQI) and Kidney Disease Improving Outcome (KDIGO) have suggested targets for main elements of mineral metabolism and anemia control in these patients. KDOQI recommends the target levels for calcium (Ca), phosphate (P), calcium ´ phosphate (Ca ´ P) product and Parathyroid Hormone (PTH) levels should be maintained at 8.4-9.5 mg/dl, 3.5-5.5 mg/dl, < 55 mg²/dl² and 150-300 pg/ml, respectively. Hemoglobin (Hb) targets between 11- 12 g/dl and 9-10 g/dl have been recommended by KDOQI and KDIGO, respectively and we have targeted on 10-12 in our ward. The aim of this study was to evaluate our ability to achieve these targets in a cohort of hemodialysis patients.

Methods. We reviewed the clinical and laboratory parameters of 565 cumulative number of patients admitted in the hemodialysis ward of Hasheminejad Kidney Hospital from 2004 to 2013, using Hemodialysis Data Processor Software (HDPS).

Results. There were 565 patients with mean age of 56.10 ± 17.14 (57% male, 43% female). Median dialysis vintage was 53.5 ± 3.3 months. The percentage of patients whose Hb and serum Ca, P, Ca´P and PTH were within target ranges were 58.2%, 66.5%, 52.8%, 73.7% and 36.4%, respectively. The median survival was significantly lower in patients with Hb < 10 g/dl compared to those with Hb between 10-12 or higher than 12 g/dl ($P = 0.003$). The medial survival was not different between different Ca groups; however, it was significantly lower in patients with $P < 3.5$ mg/dl compared to those with $P = 3.5$-5.5 mg/dl or > 5.5 mg/dl ($P = 0.000$). Also the median survival was significantly lower in patients with PTH < 150 ng/ml compared to those with PTH between 150-300ng/ml or > 300 ng/ml ($P = 0.001$). The median survival was not different between patients with Ca´P lower or > 55 mg²/dl².

Conclusions. In our unit, the management of mineral metabolism and anemia control is still far short from the targets. Our findings resemble those reported in the literature and this seems to be a universal challenge. We could show a better median survival in those patients with better mineral metabolism and anemia control. This emphasizes on the need for improvement in treatment strategies to better achieve the targets. Ca-P product did not affect survival, as some previous studies have shed doubt on the use of this parameter.

P320

Plasma Aldosterone Level in Metabolic Syndrome Patients Compared with Individuals Without Metabolic Syndrome, A Survey on Iranian Population

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Introduction. Previous studies showed the role of Aldosterone in pathogenesis of Metabolic syndrome (MetS). The aim of this study was analysis the relation between Plasma Aldosterone (PA) and MetS and its components by comparison of PA in subjects with and without MetS.

Methods. This cross-sectional study was designed on an Iranian sample in two groups with and without MetS (240 people in all). Aldosterone level in both groups was measured and then compared with presence of MetS and its components (waistline circumference, HDL, FBS and TG). Finally, data was analyzed using SPSS-17.

Results. No significant differences between mean PA level in subjects with and without MetS were seen. In subjects without MetS, HDL was positively correlated with PA (r = 0.294, $P < 0.001$) and TG was inversely correlated with PA (r = -0.220, $P = 0.012$). In subjects with MetS, PA correlated positively with FBS (r = 0.228, $P = 0.021$). With increasing age and metabolic risk factors, PA level was decreased.

Conclusions. This result suggests that Aldosterone has no role in the late stages of MetS. This finding needs to be evaluated in future studies and the positive association of Aldosterone with HDL needs to be more explained.

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Vitamin D Level in Hemodialysis Patients

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Introduction. Vitamin D (25 OH) deficiency and insufficiency can be common in patients with End Stage Renal Disease (ESRD).25 (OH)Vit D can have beneficial effects on bone, cardiovascular and immune function and insulin resistance. There is no data about vitamin D levels in many dialysis centers.This study is undertaken to determine the vitamin D level status in an Iranian hemodialysis center with 210 patients.

Methods. Serum 25 (OH) Vit D, Calcium, Phosphorous, Alkaline Phosphatase, PTH and HbA1c are evaluated. The Vitmin D is measured by ELISA method. The level is divided to very severe deficiency, severe deficiency, insufficiency, suboptimal, optimal, upperoptimal, overdose, andtoxic.

Results. Out of 210 patients, 43.8% were women (mean age 51.37, SD = 15.48) and 56.2% men (mean age 53.56, SD = 13.3). In terms of Vitamin D3, 10.9% of women and 1.7% of men had a very severe shortage, 31.5% of women and13.6% of men had a severe shortage, 10.9% of womenand 21.7% of men had deficiency, 7.6% of women and 16.9% of menunder suboptimal, 25% of women and 17.8% of menhad optimal level, 8.7% of women and 11.9% of men had above normal level, 5.4% of women and 11% of men had overdose level. There was a statistically difference between women and men regarding vitamin D3 levels. There was a significant difference in Creatinine mean level between women and men (W = 7.08; M = 8.72; $P < 0.001$), but in terms of Ca (W = 8.35; M = 8.33; $P = 0.83$), Ph (W = 4.83; M = 5.16; $P = 0.098$), and HbA1c mean level (W = 6.05, M = 5.63, $P = 0.175$) there were not any statistically differences. A negative correlation between age of patients and vitamin D3 level (r = - 0.154, $P = 0.026$), but no correlation between age and other variables (Cr, Ca, Ph, Alkaline phosphatase and HbA1c) was Found ($P > 0.05$). Vitamin D3 level was not correlated with any of Cr, Ca, Ph, Alkaline phosphatase and iPTH and HbA1c level ($P > 0.05$).

Conclusions. This present study shows the pathological lack of Vitamin D deficiency in about half of the hemodialysis patients.Except the over dose situation, males have better vitamin D status than females. Further studies to evaluatethe corrolation of vitamin D with residual renal function, sun light exposure (seasonol study), Kt/V, mortality and serum albumin are recommended as well.

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Correlation Between Abdominal Aortic Calcification and Mortality in Dialysis Patients

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Introduction. The presence and progression of Abdominal Aortic Calcification (AAC) have been demonstrated as important risk factors for mortality in Peritoneal (PD) and Hemodialysis (HD) patients. Therefore, the aim of this study was to investigate the correlation between AAC and mortality in PD and HD patients.
Methods. A prospective cohort study was performed on 120 dialysis patients [29 patients (24%) on PD, and 91 patients (75.8%) on HD]. AAC was measured on baseline lateral abdomen radiographs by the semi-quantitative method. The AAC score was 0, 1, 2, 3 and 4. Score 0 was defined no calcification. The primary outcome was death. The patients followed up for 1 year.
Results. The mean age was 58 ± 14.2 years (19-86 years). 81 patients (67%) were men. The most common cause of renal failure was diabetes mellitus (64 patients, 53%).The prevalence of AAC score 0, 1, 2, 3, 4 was 39 patients (32.5%), 27 patients (22.5%), 19 patients (16%), 20 patients (17%), and 15 patients (12.5%), respectively. 81 patients (68%) had abdominal aortic calcification (AAC > 0). 18 patients (15%) died and 13 patients (10.8%) suffered from ischemic heart disease and 2 patients (1.7%) from myocardial infarction during follow-up. Patients with no ACC had higher mortality rate compared with patients with ACC (12.8% vs 35%, $P < 0.01$).
Conclusions. The vascular calcification is common in dialysis patients. AAC is associated with higher mortality rate in dialysis patients.

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Comparing the Clinical Findings of Patients on Thrice and Twice Weekly Hemodialysis

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Introduction. There have been always some concerns regarding patients with less than three times per week of chronic hemodialysis. In present study, we compared the clinical findings of end-stage renal disease patients who are on thrice and twice weekly Hemodialysis (HD).
Methods. We analyzed the data of Fars Hemodialysis Registry and included chronic hemodialysis patients of at least 6 months duration. We included the mean values of blood findings, HD adequacy and nutritional parameters of a 6-month period for every patient during year 2012.
Results. We analyzed the data of 541 patients, 147 (27%) patients of at least 3 times per week of HD (group A) and 394 (73%) patients of less than 3 but more than 2 sessions per week (group B). The mean ages of group A and B were 52.2 ± 16 and 54.3 ± 16 years ($P = 0.18$) with 59 (40%) and 165 (42%) females, respectively. Body Mass Index (BMI) of group A was 22.5 ± 4 and group B was 22.6 ± 4 ($P = 0.79$). Mean values of Kt/V (1.34 ± 0.2 vs. 1.35 ± 0.2), blood flow rate (273 ± 30 vs. 277 ± 28 cc/min), systolic and diastolic blood pressures (133 ± 13 vs. 134 ± 13 mmhg and 79 ± 5 vs. 79 ± 7 mmhg) were not different between groups A and B, respectively. While the mean values for serum calcium, phosphorus, BUN and creatinine were not significantly different, patients on group A had higher levels of hemoglobin (11.0 ± 1.5 vs. 10.6 ± 1.3 g/dl; $P = 0.005$) and albumin (4.1 ± 0.4 vs. 4.0 ± 0.4 g/dl; $P = 0.014$). Net protein catabolic rate was not different in two groups.
Conclusions. Patients on thrice weekly HD had higher hemoglobin and albumin values compared to twice weekly HD which could be due to higher frequency of dialysis and better solute removal.

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Effect of Blood Flow Rates of Over 300 and Less than 300 mL/min on Chronic Hemodialysis Patients

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Introduction. Adjusting Blood Flow Rate (BFR) during Hemodialysis (HD) is an essential part of a successful HD. The recommended BFR of 300 to 500 ml per minute is not usually applied in many centers. In this study, we compared the clinical findings of different BFR in HD patients.

Methods. We analyzed the data of Fars Hemodialysis Registry in Iran and included chronic HD patients of at least 6 months duration. We included the mean values of blood findings, HD adequacy and nutritional parameters of a 6-month period for every patients during year 2012 and compared the patients who had an average 300 ml/min or more of BFR with those with 200 to 300 ml/min over the period of analysis.

Results. Out of 303 HD patients, 134 had average BFR of 300 ml/min or more (mean BFR of 310 ± 10 ml/min) (group A) and 169 patients had mean BFR of 200 to 300 ml/min (average of 239 ± 12 ml/min) (group B) ($P < 0.001$). Mean age of patients in group A was lower (56 ± 16 vs. 60 ± 15 years; $P = 0.025$) but they had higher BMI (23.2 ± 4 vs. 21.7 ± 4). In analysis of blood findings, the mean values for albumin, calcium, phosphorus and BUN were not different between two groups. While Kt/V was lower in group A (1.3 ± 0.2 vs. 1.4 ± 0.2; $P < 0.001$), they had higher hemoglobin (11 ± 1.4 vs. 10.5 ± 1.3 g/dl; $P = 0.001$) and creatinine levels (8.0 ± 2 vs. 6.8 ± 2 mg/dl; $P < 0.001$).

Conclusions. Despite the general recommendation of the minimum BFR of 300 ml/min in the literature, patients with lower weights could have an adequate HD with BFR of less than 300 ml/min. Higher blood flow rates might have a role in improvement of hemoglobin level.

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Epidemiologic Study of Hemodialysis Patients in Isfahan

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Introduction. Hemodialysis (HD) is one of the renal replacement therapies for patients with End-Stage Kidney Disease (ESKD). This Review focuses on the epidemiologic characteristics of HD patients in Isfahan city, Iran and also some HD centers of Isfahan province.

Methods. In this cross-sectional study, 1051 HD patients were evaluated in 2013. They have been undergoing HD in 8 HD centers of our city and 5 satellite centers to a radius of 30 kilometers of the city. Characteristics of the patients including age, sex, level of education, occupation, living place, blood group, primary renal disease, family history of ESKD, vascular access, duration of HD and other variables were collected from patients' records and also personal patients interviews. Data were analyzed using SPSS-15.

Results. The total number of 1051 HD patients was studied. 61% were male, mean age was 46.5 years, 92% live in private house. Most of HD patients (11%) live in downtown. Blood group was O in 38% of the patients. Family history of ESKD was positive in 24% of the patients. 4% of the patients were from other countries especially from Afghanistan. 38% of patients were illiterate. 21% had daily wage job and 7% were unemployed before starting HD. The most common primary renal disease was diabetes mellitus. Vascular access of 52% of the patients was native arteriovenous fistula. The mean duration of HD was 52 months. The prevalence rate of HD in our city is 300 pmp.

Conclusions. Based on the study, most epidemiologic characteristics of our patients were similar to western countries especially United States with the exception of the mean of age and duration of HD that were higher in those areas.

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Evaluation of Training Effectives Based on HBM Model Upon Self – Care Behavior of Patients Undergoing Hemodialysis

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Introduction. End Stage Renal Disease (ESRD) is one of the health problems of modern societies and is one of the most common people diseases in all countries of the world. Self-care is one of the important aspects of treatment in Hemodialysis

(HD) patients. Health Belief Model (HBM) is a psychological pattern for prediction of prevention behavior in relapse. Therefore, purpose of this study is evaluation of training effectives based on HBM model upon self – care behavior and benefits and barriers in conducting such model in HD patients. **Methods.** In this experimental study, 80 (40 Male and 40 Female) HD patients in 2013 an in two hospitals were selected with random sampling method.These hospitals are Imam Reza in Amol and Imam khomeini in Noor that are affiliated to Mazandaran University of Medical Sciences. Patients of intervention group were trained in three sessions of 15-20 minutes. Data from the questionnaires and interviews with patients, before and after intervention were collected and correlation coefficient and regression analysis results were analyzed by SPSS-18 and testing of Anova and T-test.

Results. After interventional training, awareness rate and attitudinal variables and performance of self-care behavior of HD patients (73.5%) and benefits of these behaviors (19.2%) were significantly increased than before the educational intervention group ($P < 0.001$) and decreased barriers significantly ($P < 0.001$). No significant change was observed in control group.

Conclusions. Training based on HBM model for promoting self-care behavior in patients undergoing HD is an effective and widely acceptable approach. Physicians and nurses in dialysis centers can have an effective role in improving self- care behavior by promotion this method which lead to better quality of life.

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Microalbuminuria in Overweight and Obese Patients

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Introduction. In recent years, increasing prevalence of obesity and chronic kidney disease concurrently in the world is a cause for great concern. Obesity can lead to various stages of chronic kidney disease like microalbuminuria. Microalbuminuria is an early sign of endothelial dysfunction. The purpose of this study was to estimate urinary albumin creatinine ratio in non- diabetic normotensive overweight and obese individuals.

Methods. 200 normotensive overweight and obese adults who referred to obesity center in Shahid Sadoughi Hospital were selected. Anthropometric measurement [Body Mass Index (BMI) and Waist to Hip Ratio (WHR)] and biochemical estimation were carried out. Data were analyzed with chi-square, ANOVA, t-test and Pearson correlation.

Results. The mean age of study group was 34.01 ± 9.72, the mean of BMI was 32.81 ± 4.8 and the mean of fasting blood sugar was 91.79 ± 9.26 mg/dl. Microalbuminuria was present in 22 (11%) of 200 overweight and obese subjects. The prevalence of microalbuminuria was increased with BMI category ($P = 0.04$). The association between BMI and WHR was observed only in men ($P = 0.024$).

Conclusions. The prevalence of microalbuminuria increases with increasing BMI and WHR. As BMI and WHR increse, the prevalence of microalbuminuria becomes more.

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Oxidized Serum LDL in End Stage Renal Disease

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Introduction. Disturbances in metabolism of lipoprotein profiles and oxidative modification of Low Density Lipoprotein (ox-LDL) contribute to Cardiovascular Disease (CVD) and development of oxidative stress in patients with renal replacement therapy. This study was designed to compare ox-LDL levels and lipid profiles in Kidney Transplant recipients (KT) and Hemodialysis (HD) patients. **Methods.** We investigated the concentration of ox-LDL in HD (n = 30) and KT (n = 30) patients compared with healthy control group (n = 30). **Results.** KT patients had moderate hyper-cholesterolemia, hyper-triglyceridemia and a higher ox-LDL level compared to control group. Ox-LDL had positive correlation with the age of transplantation. HD patients had moderate hyper-triglyceridemia, normocholesterolemia and a lower level of High Density Lipoprotein (HDL) compared with control group. The concentration of ox-LDL correlated positively with Blood Urea

Nitrogen (BUN) level in HD subjects.

Conclusions. One of the critical complications in end stage renal disease is CVD; high oxidized LDL may be an important risk factor for CVD in this group of patients especially in KT group.

Oxalate Nephropathy After Jejuno-Ileal Bypass Surgery

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Introduction. The most common cause of renal oxalosis is enteric hyperoxaluria secondary to fat and bile salt malabsorption. These free fatty acids, bind to calcium and leave oxalate free to be absorbed in the intestinal lumen and excerted in urine. Oxalate nephropathy is an under-recognized phenomenon of bariatric surgery and Roux- en-Y Gastric Bypass and leads to rapid progression to End Stage Renal Disease (ESRD).

Methods. Here we present data to confirm that hyperoxaluria is the chief cause of renal failure after bariatric surgery.

Results. So we reported three cases with renal insufficiency and secondary oxalosis after jejunoileal bypass surgery for obesity came with rising creatinine. All of them presented with rising creatinine after surgery.

Conclusions. In patients with acute renal functional deterioration and a history of bariatric surgery the differential diagnosis should include oxalate nephropathy and renal biopsy should be considered to establish the diagnosis.

Relevance between Serum Selenium Levels with Malnutrition and

Inflammatory Markers in Hemodialysis Patients

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Introduction. Selenium is a rare element that works as an enzyme co-factor through the body and its role in antioxidative actions is proven. Some studies have shown that the serum level is low in Hemodialysis (HD) patients. This reduction may have reductive effects on inflammatory and immunologic regulations in these patients. On the other hand, malnutrition is so common between HD patients and is related to increased risk of morbidity and mortality. As selenium deficiency leads to oxidative stress and inflammatory response, these patients may have high levels of oxidative stress and inflammation which can subsequently induce malnutrition. Finally, we designed this study to scrutinize the relevance between serum Selenium levels with malnutrition and inflammatory markers in HD patients.

Methods. In this cross-sectional study, 88 patients, undergoing maintenance HD at the dialysis unit of 5- Azar hospital, Gorgan, Iran, were enrolled following consenting. Blood samples to measure Selenium, CRP, HDL, LDL, TG and Albumin were taken. Using Vit E or C, Lipoic acid, Omega 3 fatty acid, immune system attenuator medications, pregnancy and active infection were considered as exclusion criteria. Also, we separated the Selenium levels in two groups of «Over half normalized» and «under half normalized» for further analysis. The relevance between Selenium and malnutrition was assessed by the modified SGA (Subjective Global Assessment of nutritional status) and calculated by «Fisher exact test». To find the possible relevance between serum Selenium levels and HDL, LDL, TG and albumin, we used «Spearman rank correlation».

Results. Just 2 cases (one 49 years old man and one 54 years old woman) had hyposeleniumia (2.3%). 70 patients (79.5%) were well nourished and 18 cases (20.5%) were moderately malnourished that it was not significant ($P = 0.631$). Sixty of 86 patients (69.7%) with normal selenium level were over half normalized and 26 patients (30.3%) were under half normalized Selenium level that this second group

Third Day

didnot have a significant relation with malnutrition ($P = 0.445$). Mean HDL, LDL and TG levels were 39.8, 78.38 and 97mg/dl, respectively ($P = 0.984$, $P = 0.746$, $P = 0.387$) with no significant relation. The mean serum albumin level was 4.28mg/dl that it had a positive significant relation with Selenium level ($P = 0.025$). Maximum CRP detection was 3+ that it didnot have any significant relation with Selenium ($P = 0.861$).

Conclusions. Our study showed that the mean level of Selenium is lower in HD patients, but we found no significant relations beween malnutrition and Selenium levels ($P = 0.445$).The mean serum albumin level was 4.28mg/dl that it had a positive significant relation with Selenium level ($P = 0.025$).

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Effectiveness and Safety of Magnesium Carbonate in Hyperphosphatemic End Stage Renal Disease Patients Under Hemodialysis

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Introduction. Hyperphosphatemia is a major problem in hemodialysis patients, calcium based phosphate binders are effective but can not be used when calcium, phosphorus product is to high, The substitute drugs like sevelamer carbonate and hydroxide are to expensive. Magnesium salts bind dietary phosphorus strongly, but their use in renal patients is limited due to their potential for causing side effects. The aim of this study was to evaluate the efficacy and safety of magnesium carbonate ($MgCO_3$) as a short-term phosphate binder in hemodialysis patients.

Methods. In a non-blinded prospective randomized clinical trial 42 stable hemodialysis patients were randomly allocated to receive either $MgCO_3$ (n = 20) or calcium carbonate ($CaCO_3$), (n = 21) for 6 weeks, according to the inclusion criteria: at least 3 months on hemodialysis, aged more than 18, serum phosphorus level more than 5.5 mg/dl. In control group Patients receive 500 mg $CaCo_3$ after each meal and in trial group patients receive 250 mg $MgCo_3$ after each meal. The magnesium concentration of hemodialysis fluid decrease to 0.7 meq/l.

Results. All of the patients had finished the study except one patient in control group ($CaCo_3$) died in 2nd day of study because of acute MI. The mean calcium level was 8.51 vs 9.1 mg/dl in $MgCo_3$ and $CaCo_3$ groups respectively ($P < 0.05$). The mean serum albumin was higher in trial group at 6th week ($P < 0.001$). There were no episodes of hypermagnesemia or other major side effects (Arrhythmia, diarrhea or muscle weakness) in trial group. There were no significant differences in serum phosphorus, blood pressure, lipid profile, and CRP levels between two groups. Non-inferiority of $MgCO_3$ to $CaCo_3$ established in this study.

Conclusions. Our study shows that $MgCO_3$ administered for a period of 6 weeks is an effective and inexpensive agent to control serum phosphate levels in hemodialysis patients.

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