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Motivations of Non-Related Living Kidney Donors in Khuzestan Province, Iran

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Introduction. Although there are some studies about socioeconomic status and motivations of non-related living kidney donors before kidney transplantation; however, it seems that we need other additional study for better evaluation.

Methods. We designed a provisional questionnaire for assessment of motivations of our non-related living kidney donors after kidney donation. The authors interviewed all donors and then the questionnaire and an instruction documents were given to them. Informed consent was obtained from all donors and they were assured that their responses were confidential. It made clear to all participants that their replies would not create any benefit or harm to them.

Results. Overall, 60 living kidney donors, 54 male (90%) and 6 female (10%), consented and filled the questionnaires. The mean age of all donors was 28.4 ± 5.6 years old. Motivation for donation was financial problems by 48 respondents (80%) and 12 respondents (20%) had other motivation (religious beliefs, wish to help, and external pressure). Forty-four donors (73%) was agree with donation of kidney by the own family members, but others (27%) did not agree. Forty donors (66%) could resolve the financial problem, but problems of others (34%) have remained. Fifty-four donors (90%) had not regular follow up after donation, whereas only 6 (10%) had close fallow up. Twenty two donors (36%) said that donation led to creation of friendship between them and recipients. Eighteen donors (30%) did not said about the donation to own relatives, whereas 42 (70%) said about this and 36 of them were faced with their resistances.

Conclusions. According to results of our study, the main motivation of non-related living kidney donors for donation in Khuzestan province, Iran

is financial incentive and most of them had not regular follow up after donation.

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The Protective Effect of Theophylline in Cisplatin Nephrotoxicity

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Introduction. Cisplatin is a potent and a major antineoplastic drug in the treatment of a broad spectrum of malignancies. However, its clinical use is limited by renal tubular dysfunction that occurs in significant percent of patients and aim of the present study was to evaluate the possible protective effect of Theophylline in prevention of cisplatin-induced nephrotoxicity.

Methods. The trial design was prospective, randomized, double blinded and placebo controlled. Chemotherapeutic patients who were received Cisplatin at a dosage of at least 50 mg/m² alone or combined with other chemotherapy agent were included in the study. We randomizely divided our patients in two groups. In group 1 (n = 38), placebo was advised; in group 2 (n = 38), patients received 4 mg/kg Aminophylline as an intravenous loading dose, followed by Theophylline in a dose of 200 mg three times daily orally, for 4 consecutive days.

Results. In overall 76 patients were included in the study. Thirty-eight patients were selected as placebo group (group 1, 22 males and 16 females) and 38 ones as theophylline group (group 2, 26 males and 12 females). The mean age and mean dose of Cisplatin were 51 ± 17.6 years and 86.71 ± 43.18 mg, respectively. The prevalence of Cisplatin nephrotoxicity in group 1 and 2 were 7.9% and 5.3%, respectively. There was no significant difference between them ($P > .05$). There also were no significant association between Cisplatin nephrotoxicity and different age ($P = .1$), males and females ($p=0.64$) and mean dose of Cisplatin ($P = .8$).

Conclusions. These results indicate that prophylactic

application of Aminophylline and Theophylline has not a protective effect against Cisplatin nephrotoxicity.

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Hepatitis B Infection in ESRD Patients in Khuzestan Province, Iran

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Introduction. The hepatitis B virus (HBV) is one of the most important infections in the End-Stage Renal Disease (ESRD) patients. It appears that epidemiology of HBV infection in ESRD patients has been changed during last few decades. Aim of the study was to investigate this issue and to determine the prevalence of HBV infection and its relationship in ESRD patients.

Methods. From October 2010 to January 2011, this cross sectional study was conducted on all ESRD patients living in the province of Khuzestan, Iran. The patients were screened for Hepatitis B surface antigen (HBsAg) by enzyme-linked immunosorbent assays (ELISA). The statistical package for social sciences (SPSS) version 15 software was used for data analysis. The Ethics committee of the Research Center, affiliated to Ahvaz Joundishapur University of Medical Sciences approved the study.

Results. In overall, 1037 ESRD patients, 617 male (59.49%) and 420 female (40.50%), with mean age of 58.28 year were enrolled for the study. The most of patients, 997 patients (96.14%) were on hemodialysis and only, 40 patients (3.86%) were on CAPD. The prevalence of HBsAg was 1.15% (12 patients, 8 males and 4 females, with Mean age of 50.45 ± 8.1 years). All of HBsAg positive patients were on hemodialysis. There was not a significant difference between males and females ($P = .06$) and between mean age of HBsAg positive and negative patients ($P = .59$). There was a significant association between hypertension with HBsAg positivity ($P = .03$).

Conclusions. According to the present study, the prevalence of HBsAg in ESRD patients in Khuzestan province, Iran is 1.15% that it was lower than other reports from last few decades and it is not also higher than general population.

P104

Factors Associated With Post-Streptococcal Glomerulonephritis, Related Encephalopathy

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Introduction. Post-streptococcal glomerulonephritis is most common in children aged 5 to 12 years. The typical patient develops an acute nephritic syndrome 1 to 2 weeks, after an antecedent streptococcal pharyngitis. Acute complications of this disease result from hypertension and acute renal dysfunction. Hypertension is seen in 60% of patients and may be associated with hypertensive encephalopathy in 10% of cases. Patients may develop encephalopathy and/or heart failure owing to hypertension or hypervolemia. Encephalopathy may also possibly result from the direct toxic effects of the streptococcal bacteria on the central nervous system.

Methods. In this case-control study, we enrolled and observed 60 patients. Half of them were affected only by post-streptococcal glomerulonephritis (PSGN) and the other 30 patients were suffering from both PSGN and encephalopathy. Each patient was followed for a period of 3 months and clinical, paraclinical and demographic characteristics of patients were recorded and analyzed.

Results. Increased blood pressure ($P = .017$), children aged 9 to 12 years ($P = .018$), hyponatremia ($P = .015$), male gender ($P = .001$), weight above 75 percentile of curve ($P = .002$) and macroscopic hematuria > 3 weeks ($P = .012$) were significantly more common in the group with encephalopathy.

Conclusions. PSGN-related encephalopathy is more common in age bracket of 9 to 12 years, hyponatremia, male gender, weight above 75 percentile of curve, and macroscopic hematuria >3 weeks making more vigilance necessary in these patients.

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Severe Heart Failure Is Not an Absolute Contraindication for Kidney Transplantation

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Introduction. It is well known that Chronic Kidney Disease (CKD) is responsible for many cardiac complications. The exact pathophysiology of heart disease in End-Stage Renal Disease (ESRD) have not been understood but many theories have been assumed. After renal transplantation, many of these complications improve. It is not known to what extent cardiac failure due to chronic renal failure is reversible.

Case Report. We report five cases with ESRD and severe heart failure with multi-valvular dysfunction, which were in the waiting list of heart transplantation. All cases had Left Ventricular Ejection Fraction (LVEF) below 20%. After medical management, LVEFs were up to 30%. After successful kidney transplantation, they were asymptomatic and LVEFs rose to more than 50% after three months.

Conclusions. Successful renal transplantation in especial conditions may significantly improve the cardiac function in ESRD, even with severe heart failure.

P106

Neuropathy in Type 1 Diabetic Renal Transplanted Patients

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Introduction. Many studies showed that simultaneous pancreas and kidney transplantation will improve diabetic neuropathy. We designed a study for clarifying effects of kidney transplantation alone on neuropathy of type 1 diabetic patients.

Methods. From April 2007 to June 2010, thirty renal transplanted patients with type 1 diabetes mellitus and thirty type 1 diabetic patients with 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, and 18 months after renal transplantation (RT).

Results. The NCV improved in the RT group in 18 months of follow up period versus baseline ($P < .01$). This parameter worsened significantly in the control group throughout the study ($P = .03$) and in a cross sectional analysis between two groups, we could not find any remarkable differences ($P = .07$).

Both SNAP and CMAP amplitudes improved in the RT (SNAP_{Sural}, $P = .04$; SNAP_{Median}, $P = .01$; CAMPP_{Peroneal}, $P = .03$; and CAMPU_{Ulnar}, $P = .02$) but they worsened in the control group (SNAP_{Sural}, $P < .001$; SAP_{Median}, $P < .01$; CAMPP_{Peroneal}, $P < .01$; and CAMPU_{Ulnar}, $P < .01$). Comparison of both groups did not show any significant statistical changes.

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

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The Comparison of High Flux and Low Flux Membrane on Pulmonary Function Test and Oxygen Saturation in Hemodialysis Patients

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Introduction. Several studies have been done to evaluate the effects of hemodialysis on Pulmonary Function Tests (PFT) and Arterial Blood Gas (ABG) indices. Dialysis procedure may reduce lung volumes and capacities and cause hypoxia; however, there was no previous study on evaluation of effects of membrane type (high flux versus low flux) on PFT in these patients. Our aim was the evaluation of this relation.

Methods. In a cross sectional study, 43 hemodialysis patients free of pulmonary disease were enrolled. Dialysis was done by low and high flux membranes, before and after the procedure, spirometry and pulse oxymetry were done, and the results were evaluated.

Results. Mean age of the patients was 56.34 year. There were 23 (53.5%) women and 20 (46.5%) men. There was no difference between O₂ saturation before and after dialysis in patients with low flux membrane (92.3% and 93.2%, respectively), in patients with high flux membrane (95% and 94.4%, respectively), and between patients with low and high flux membrane ($P > .05$). The type of membrane (high flux versus low flux) did not also show any significant effect on PFT results ($P > .05$).

Conclusions. According to our results, due to

higher cost of high flux than low flux membranes and also no significant difference in the results of spirometry and pulse oxymetry of patients, it could not be offered the use of high flux membrane for this purpose.

P108

Comparison of Three Methods of Contrast Nephropathy Prophylaxis in Azotemic Patients

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Introduction. About 10% of renal dysfunction in admitted patients is due to contrast nephropathy (a common and preventable cause of acute renal failure) which 10% of them can lead to dialysis. Several methods have been used to prevent contrast nephropathy such as hydration with normal saline or half-normal saline solutions, using N-acetyl cystein, ascorbic acid, and contrast agent with less toxicity. The aim of this study was comparison of prophylaxis effect of normal saline with N-acetyl cystein or ascorbic acid to prevent contrast nephropathy.

Methods. In a randomized clinical trial, 120 candidate of angiography with serum creatinin (Cr) more than 1.3 mg/dL and/or GFR less than 70 mL/min were enrolled in three identical groups in size. In first group, normal saline (100 mL/h since 12 hours before to 12 hours after angiography) plus N-acetyl cystein (600mg, bid, since 24 hours before to 24 hours after angiography) was prescribed. In second group, normal saline (the same as first group) plus ascorbic acid (one 250 mg tablet, every 12 hours, totally 4 tablets) and in third group only normal saline (100 mL/h) was prescribed. Before and after 72 hours of angiography serum BUN and Cr were checked and GFR was measured with cograft gault formula.

Results. In our study, 120 patients (40 females and 80 males) in 3 groups were evaluated. The mean age of the patients was 67.6 ± 8.1 years. The mean of patients' Cr before and after angiography was determined as 1.65 ± 33 mg/dL and 1.7 ± 0.37 mg/dL, respectively. In addition, patients' GFR was calculated (55.2 ± 5.61 and 53.15 ± 6.73 mL/min, respectively). There was no significant difference

among patients of three groups in terms of age, gender, serum Cr and GFR before angiography. There was also no significant difference between patients of three groups in terms of serum Cr and GFR after angiography.

Conclusions. Hydration with normal saline has the basic role in the prevention of contrast nephropathy and adding other agents as N-acetyl cystein or ascorbic acid does not have any additional benefit.

P109

Comparison of Mood Depression Disorders and Anxiety in Hemodialysis Patients Versus Renal Transplant Patients in Shahrekord, Iran

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Introduction. Depression and anxiety in hemodialysis patients are more common than normal population. A few studies were done in kidney transplant patients about Mood Depression Disorders (MDD). Transplant patients are subject to emotional stress and MDD, because of prolonged disease, multiple drugs consumption, fear of allograft rejection, economic problems, and so on. The aim of the study was the evaluation of prevalence of MDD in hemodialysis and transplant patients.

Methods. This comparative descriptive study was done on 100 dialysis and 100 transplant patients in Shahrekord University of Medical sciences. These patients evaluated based on Hamilton and Spielberger checklist and collected data was evaluated with SPSS software.

Results. There was no significant difference between two groups based on age, gender, and duration of dialysis. The depressed mood, sensory symptoms, autonomic symptoms, and urogenital symptoms were more common in dialysis group than transplant group ($P < .05$), while anxiety was more common in transplant group patients.

Conclusions. MDD and anxiety are common in dialysis and transplant patients; therefore, family and social support may be effective to decrease these disorders and increase quality of life in these patients.

P110

Metabolic Evaluation In Patients With Kidney Stone, A Report From Isfahan, Iran

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Introduction. Kidney stones are generally formed because of disruption in the sensitive equilibrium between the solubility and sedimentation of solutes. Several lines of evidences are suggesting that stone formation could originate from underlying metabolic derangements. Serum and Urine analysis in kidney stone patients can provide a good insight about the underlying metabolic causes of nephrolithiasis. In this study, we sought to assess metabolic and electrolyte abnormalities among kidney stone formers in Isfahan, Iran.

Methods. Four hundred thirty seven kidney stone patients were included. All subjects were above 18 years old with glomerular filtration rate of over 60 mL/min/ 1.73 m². None of the cases were under medications that could affect the metabolic status or urinary excretion rates. Metabolic evaluation was performed by taking a 24 hours urine sample and fasting venous blood sample.

Results. Among our patients, 226 were female (51.7%) and 211 were male (48.3%). The mean age was 46 ± 13.8 years. Hypocitraturia (40.5%), hypernatruria (31.8%), and hyperoxaluria (28.8%) were the most frequent metabolic derangements in 24 hours urine analysis. In addition, hypercalcemia (12.6%), hyperuricemia (10.5%), and hypernatremia (4.8%) were the most common abnormalities observed in the fasting blood results.

Conclusions. This is the first report of metabolic abnormalities among patients with nephrolithiasis in our region (Isfahan, Iran). Hypocitraturia was the most frequent metabolic derangements. In the literature, several similar studies address hypercalciuria as the most common cause of nephrolithiasis. However, there is no consensus about the exact role of metabolic disorders in kidney stone formation. Studies from various regions of the world differ in reported metabolic disorder frequencies, which is probably due to diverse nutritional habits and ethnicities. In conclusion,

we suggest performing metabolic evaluations in kidney stone patients, to provide implications for more appropriate preventive health measures and treatment.

P111

Effects of Carnitine Supplement on Dyslipidemia and Anemia in Hemodialysis Patients

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Introduction. Carnitine deficiency is a common condition in patients on maintenance hemodialysis that contributes to dyslipidemia, anemia, and poor general health in these patients. We evaluated the effect of oral L-carnitine supplementation on lipid profile, anemia, and quality of life in hemodialysis patients.

Methods. This randomized, double-blinded, placebo-controlled, trial was conducted on dyslipidemic patients on maintenance hemodialysis. Patients in the intervention group (24 patients) received 1 g/d of L-carnitine (500 mg, twice daily) and the placebo group (27 patients) was similarly taking placebo for 16 weeks. Concentrations of plasma triglycerides, total cholesterol, HDL, LDL, hemoglobin, erythropoietin dose, and quality of life (QOL, using Short-Form Health Survey) were measured at baseline and weeks 8 and 16 after the intervention.

Results. After the intervention, there was a significant decrease in triglyceride (-31.1 ± 38.7 mg/dL, $P = .001$) and a significant increase in HDL (3.7 ± 2.8 mg/dL, $P < .001$) and hemoglobin (0.7 ± 1.7 g/dL, $P = .037$) concentrations in the carnitine, but not the placebo group. Decrease in total cholesterol concentration in the carnitine group was not statistically significant (-6.6 ± 16.0 mg/dL, $P = .055$). No significant change was seen in LDL concentration in any group ($P > .05$). Erythropoietin dose was significantly decreased in both the carnitine (-4750 ± 5772 mg, $P = .001$) and the placebo (-2000 ± 4296 mg, $P = .033$) groups. No improvement was observed in QOL scores or its domains in any group.

Conclusions. In patients on maintenance

hemodialysis, oral L-carnitine supplementation has significant beneficial effects on lipid profile. Also, it can increase hemoglobin concentration and subsequently reduce needed erythropoietin dose, but has no considerable effect on quality of life in hemodialysis patients.

P112

Hypophosphatemia After Renal Transplantation, a Single Center Study

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Introduction. Hypophosphatemia is a common complication of kidney transplantation reported in 25 to 80% of patients receiving a kidney allograft. Re-distribution of phosphate between intra- and extra-cellular compartments, osmotic diuresis, and renal phosphate loss under the influence of high parathyroid hormone levels constitutes its main mechanisms. The aim of this study was to evaluate the incidence and risk factors of hypophosphatemia in the early post-transplantation period.

Methods. Forty patients who received a kidney allograft between May and August 2009 were studied prospectively. Blood and urine samples were collected one day before renal transplant (-1) and on the 1st (+1), 7th (+7) and 14th (+14) post-transplantation days. Dietary phosphate (P) content was evaluated by a dietician. Paired sample *t* test was used to compare the pre- and post-transplant values.

Results. Twenty-one patients (52.5%) were female. The mean age of patients was 38.9 ± 12.5 years old. Serum P significantly decreased on days +1, +7, and +14 compared to day -1 (4.31 mg/dL, 3.10 /dL, and 3.31 mg/dL versus 6.32; respectively, $P < .001$ for all comparisons). Dietary P significantly raised from 615.5 ± 220 mg/d on day -1 to 1407.5 ± 113.5 mg/d on day +1, 1399.2 ± 173 mg/d on day +7, and 1394.3 ± 228.5 mg/d on day +14 ($P < .001$ for all comparisons). Parathyroid hormone level (PTH) had a trend to be lower on day +14 versus day -1 (197.9 ± 183 versus 294.4 ± 269.5 pg/mL, $P = .06$). The level of 25 (OH) D was the same at days -1 and +14 (58.534 versus 54.136 , $P = .44$). One patient

(2.5%) had hypophosphatemia (serum P < 2.5 mg/dL) before transplant, 2 patients (5%) at day +1, 5 (12.5%) at day +7, and 6 (15%) at day +14. Overall, 11 (27.5%) patients had at least one episode of hypophosphatemia. Hypophosphatemia (at any time) was significantly associated with dietary P content at day +7 ($P = .02$). Mean serum creatinine (Cr), calcium (Ca), magnesium (Mg), potassium (K), PTH, and fractional excretion of P (FEP) were not significantly different in any post-transplant period between patients with hypophosphatemia versus without hypophosphatemia. There was a positive correlation between serum P at day +1 and the same days serum Ca ($r = 0.46$, $P = .02$), Cr ($r = 0.59$, $P = .000$), Mg ($r = 0.32$, $P = .04$), K ($r = 0.49$, $P = .001$) but not with PTH and 25(OH)D₃ levels and FEP, At day +7. There was a positive correlation between serum P and Cr ($r = 0.57$, $P = .000$) and PTH level ($r = 0.39$, $P = .01$). At day +14, there was a negative correlation between serum P and dietary P ($r = -0.33$, $P = .05$), Ca ($r = -0.34$, $P = .03$) and FEP ($r = -0.40$, $P = .01$) and a positive correlation with Cr ($r = 0.37$, $P = .018$) and PTH levels ($r = 0.49$, $P = .004$).

Conclusions. Our study shows a relatively low incidence of hypophosphatemia (27.5%) in the early post transplant period. At different periods after transplantation serum Cr, FEP and PTH level were the main predictors of serum P level and low dietary P content was significantly associated with hypophosphatemia. Long-term studies after renal transplantation with concomitant evaluation of other phosphaturic agents are suggested.

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Drug Compliance in Hemodialysis Patients, Correlation With Depression, Quality of Life, and Medical Management

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Introduction. Drug compliance is one of the major predictors of well being in maintenance hemodialysis patients. It may be affected by various variables including the mood and the quality of life of patients. In addition, it may predict their health status. This study was designed to evaluate the drug

compliance of the patients of a hemodialysis ward and its correlation with the patients' quality of life, depression state, and laboratory measurements.

Methods. One hundred-fifty patients of a hemodialysis ward who consented and were capable to take part in this study were included. The mean age was 56.4 ± 16.4 years, with 52.7% of patients being female. The mean hemodialysis vintage was 4.7 ± 5.2 years. Drug compliance was evaluated through two methods, a Simplified Medication Adherence Questionnaire (SMAQ), assessing the drug compliance of patients as a whole and the Drug-Intake Percentage Questionnaire (DIPQ) evaluating compliance with antihypertensive drugs, phosphate binders, and Erythropoietin (EPO)/Venofer, separately. SMAQ classified patients as compliant or non-compliant. DIPQ classified patients as groups 1, 2, or 3, taking more than 66%, between 33 to 66% and less than 33% of administered drug dose, respectively. Quality of life was assessed with SF-36 questionnaire, socioeconomic status by a Simplified Economic Questionnaire (SEQ), and depression by Beck Depression Inventory (BDI) questionnaire. The mean levels of hemoglobin, phosphorus (P), potassium (K), parathyroid hormone (PTH), and plasma protein levels during the last 6 months were recorded from the patients' charts together with Inter-Dialytic Weight gain (IDW).

Results. SMAQ showed that overall, 75.3% of patients had a good compliance with medications. DIPQ showed that patients were taking more than 66% of their administered dose of CaCO₃ (group 1) in 55.5% of cases, Al (OH)₃ in 10.3%, Renagel in 53.8%, EPO in 84.6%, and Venofer in 74.7% of cases. SMAQ showed a significantly higher percentage of non-compliance in depressed versus non-depressed patients ($P = .009$). Also mean BDI score was higher in non-compliant versus compliant patients (19.7 ± 11.3 versus 12.6 ± 7.8 ; $P = .000$, respectively). However, mean SF-36 score was not different between compliant and non-compliant patients (52.5 ± 17.4 versus 48.4 ± 14.5 ; $P = .16$, respectively). In addition, compliance status was not different between various socioeconomic and educational levels ($P = .50$ and $P = .58$, respectively). The mean P level was significantly lower in DIPQ group 1 CaCO₃ intake compared to other groups ($P = .000$). However, the difference was not significant between different Al (OH)₃ and Renagel

DIPQ groups ($P = .25$ and $.83$, respectively). The mean PTH level was significantly lower in DIPQ group 1, CaCO₃ intake compared to other groups ($P = .02$). The difference was not significant between different Al (OH)₃ and Renagel DIPQ groups ($P = .97$ and $.83$, respectively). The mean Hb level was not different between different DIPQ groups of EPO and Venofer ($P = .65$ and $P = .15$, respectively). The mean protein, K, and IDW were not different between SMAQ groups.

Conclusions. Compliance to drugs was mainly affected by patients' mood, being worse in patients with depression and high BDI score. Noncompliance with CaCO₃ could significantly affect mean P and PTH levels. Therefore, management of depression may have a significant effect on compliance with medication and medical management of patients. The mean plasma protein, K, and IDW were not significantly predicted by general medication compliance, and it seems that other factors such as adherence to dietary regimen and water restriction should be studied in this regard.

P114

Renal Biopsy Findings in Iran, Case Series Update From a Referral Kidney Center

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Introduction. Epidemiology of renal biopsy findings is different in various centers and different parts of the world. We have previously reported the results of our renal biopsy findings from 1998 to 1997, which showed membranous glomerulopathy (MG) and IgA nephropathy (IgAN) as the most frequent biopsy findings and nephrotic syndrome as the most common presenting syndrome. As the epidemiology of glomerulonephritis is changing over the world, and focal segmental glomerulosclerosis (FSGS) is becoming more prevalent in many countries, this study was conducted to update the results of the renal biopsy findings of our center from 1998 to 2011 and compare the results with the previous findings.

Methods. Data from 2270 patients (56% male, mean age: 37.8 ± 16 years old) who had undergone

a renal biopsy in our center between 1997 and 2011 were collected in questionnaires including demographic data, renal syndrome at presentation, and laboratory findings. All kidney specimens were studied with light and immunofluorescent microscopies.

Results. Among 2204 patients with a definite pathologic diagnosis, 1667 (75.6%) had a primary glomerular disease, 386 (17.5%) had a secondary glomerular disease, 114 (5.1%) had tubular disease, 26 (1.2%) had vascular disease and 11 (0.5%) had end-stage kidney disease. The most frequent types of biopsy-proven renal diseases were MG (566 patients, 25.7%), FSGS (261 patients, 11.8%), IgAN (241 patients, 11.2%), lupus nephritis (223 patients, 10.1%), and minimal change disease (178 patients, 7.8%). The predominant presentation was nephrotic syndrome in almost all diagnoses, with the exception of chronic glomerulonephritis, end-stage kidney, acute tubular necrosis, and acute and chronic tubulointerstitial nephritis.

Conclusions. In our report of 2204 renal biopsy specimens, MG and FSGS were the most frequent biopsy-proven renal diseases. IgAN came down to the 3rd rank in primary glomerular diseases, compared to our previous report and lupus nephritis was still the most common secondary glomerular disease. This may show a trend in increasing the frequency of FSGS in our country similar to western countries, or may be due to better pathologic diagnosis, regarding the diagnosis of subtle forms of FSGS, which need great expertise. 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.

P115

The Sensitivity and Specificity of Urinary IL-8/Cr Ratio to Determination of Acute Pyelonephritis

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Introduction. Urinary Tract Infection (UTI)

is a common bacterial infection in childhood. Pyelonephritis requires more aggressive treatment, investigation, and follow up than an infection restricted to the lower urinary tract, so differentiation of pyelonephritis from cystitis is important. Because of diagnostic problem and expensiveness of cortical syntigraphy with Dimercaptosuccinic acid (DMSA), it is important to think about replacement of other valuable diagnostic equivalent such as urine cytokines and interleukins for better diagnosis of pyelonephritis.

Methods. We evaluated children aged 1 month to 14 years old who admitted with UTI in our hospital and divided them into acute pyelonephritis (APN) and cystitis groups according to the results of DMSA scan. Random urine specimens collected before and 48 hours after antibiotic therapy and IL-8 concentration measured with Enzyme Linked Immunosorbent Assay (ELISA) method.

Results. Out of 86 children with acute UTI were evaluated including 16 boys (18.6%) and 70 girls (81.4%). APN group consisted 46 patients and cystitis group were 40. The mean of pretreatment IL-8/Cr ratio in APN group was 25.7 ± 20.3 and in 48 hours after treatment was 20.9 ± 10 . In cystitis group, pretreatment IL-8/Cr ratio was 7.1 ± 6 and in 48 hours after treatment, it decreased to 4.6 ± 2.7 . Urinary IL-8/Cr ratio equal to 7 was an optimal point to establish presumptive diagnosis of pyelonephritis obtained by ROC analysis, urinary IL-8/Cr ratio had a sensitivity of 66% and specificity about 72% for diagnosing of pyelonephritis. We noted a significant correlation between urine IL-8/Cr ratio and pyuria, CRP and ESR at the time of admission ($P = .0001$). But there was not any correlation between sex and urine IL-8/Cr.

Conclusions. We noted that high IL-8/Cr ratio has a significant correlation with acute pyelonephritis and can be used as a marker for differentiation of upper and lower urinary tract infection.

P116

Hematuria Due to March Among Soldiers of Central Military Police

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Introduction. Soldiers have morning physical activities about 30 minutes 3 days per week and

in some cases, we had referral cases for hematuria after their activities.

Methods. This study was conducted as an observatory and descriptive study with simple sequential selecting method of about 110 soldiers of central military police. All of these soldiers were examined for urine abnormalities with dipsticks before and 30 minutes after march (morning exercise formalities). In these soldiers, we also record their height, weight, shoe size, and liquid consumption rate prior and within their activity and background disease.

Results. 0.9% of soldiers (one soldier) prior to our study and 2.7% (3 soldiers) after our study had hematuria and there was significant difference between hematuria of prior and after exercise ($P = 0.02$). 11% (11 soldiers) prior to exercise and 27.3% (30 soldiers) after exercise had proteinuria. There was no statistical significant relation among height, weight, shoe size and liquid consumption rate prior to and within their activities with their hematuria or proteinuria after exercise. There was significant statistical relation ($P = .03$) between background disease and proteinuria occurrence but no significant relation with hematuria occurrence ($P = .99$).

Conclusions. Exercise and morning physical activity (march) in soldiers cause proteinuria and hematuria especially in individuals suffering from background kidney disease.

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Primary Aldosteronism on Essential Hypertension, a Case Report

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Introduction. Primary hyperaldosteronism in the setting of essential hypertension (HTN) is an infrequent presentation. We describe a patient with longstanding essential HTN who presented with uncontrolled HTN and hypokalemia.

Case Report. A 53-year old woman with history of hypertension (24 years) and diabetes (3 years) presented with generalized weakness and easy fatigability. She was treated with high dose ACE-I, ARB, dihydropyridine calcium channel blocker, and beta-blocker but her blood pressure (BP) was uncontrolled since 2 years ago. In first visit,

her blood pressure was 210/120 mmHg. Her first laboratory tests were as follow: Na = 148 meq/L, K = 2.5 meq/L, Ca = 10.2 mg/dL, Mg=1.7 mg/dL, urea = 29 mg/dL, Scr = 0.9 mg/dL, venous PH = 7.46, venous PCO₂ = 41.5 mmHg, venous HCO₃⁻ = 29.4 meq/L, urine specific gravity = 1010, and normal urine sediment. She underwent treatment with Mg, high dose oral and interavenous KCl because of severe symptomatic hypokalemia, but serum potassium did not rise to > 3 meq/L. Work up for hypertension and hypokalemia including kidney sonography and renal arteries doppler sonography were normal. With suspicious of primary aldosteronism, all antihypertensive drugs were stopped and hypertension was treated with Prazocine for 2 weeks. Then laboratory tests were done. They were as follow: 24 hours urine (Cr = 1322 mg, Na = 225 meq, K = 112 meq, volume = 3600 mL), plasma aldosterone (PAC) = 134.3 ng/dL, plasma renin activity (PRA) = 0.6 ng/mL/h, and PAC/PRA = 223. With this very high PAC/PRA in spite of sodium loading diagnosis of primary hyperaldosteronism was suspected. There was no adrenal mass in spiral abdominal CT scan. Treatment was started with Spironolactone 100mg/d, Prazocin 5 mg/d, Metoprolol 50 mg/d, and Losartan 100 mg/d. In next visit her BP = 140/90 mmHg, serum K = 4.3 meq/L, and weakness was completely resolved. Diagnosis of idiopathic hyperaldosteronism was confirmed.

Conclusions. Primary hyperaldosteronism should be considered in any patient with resistant hypertension even in those with longstanding essential hypertension.

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Urinary Endothelin-1 Level in Children With Hydronephrosis

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Introduction. Hydronephrosis is a common finding in children and patients with urinary tract infection (UTI). Endothelin-1 (ET-1) is a potent vasoactive peptide that has vasoconstrictive effects. It is shown that urinary ET-1 increases in urinary obstructions. In this study, we measured urinary ET-1 level in patients with hydronephrosis of various causes.

Methods. In this case-control study, we evaluated urinary ET-1 level in 45 patients who had UTI and hydronephrosis as case group and 45 patients who had UTI without hydronephrosis (control group). Urinary ET-1 was quantified using Enzyme Linked Immunosorbent Assay (ELISA) and urinary creatinine (Cr) by Jaffe methods. To omit the effect of urinary flow rate, urinary ET-1 to Cr (ET-1/Cr) was considered for analysis of the results. The measurements were compared in case and control groups by paired and independent t-test using SPSS version 15 software.

Results. The mean age of patients was 36.5 ± 27.2 and 26.2 ± 15.5 years old, in case and control groups, respectively. Mean urinary ET-1/Cr was 89.6 ± 41.7 in case group and 29.3 ± 26 in control group ($P < .001$). The mean urinary ET-1 was 121.5 ± 55.4 in patients who had grade 4 hydronephrosis. Urinary ET-1 was significantly higher in obstructed than non-obstructed cases.

Conclusions. Urinary ET-1 is a useful marker for diagnosis of hydronephrosis especially obstructive cases. It can be used for diagnosis in these patients before invasive imaging studies.

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Plasma BKV PCR 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 following transplantation.

Methods. In a prospective, two-center study, we followed 40 renal transplant recipients who were receiving immunosuppressive therapy that included CSA, Mycophenolate Mofetil, and Prednisolon. 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 method. Renal biopsy was performed if allograft function deteriorated.

Results. The subjects were 20 to 62 years old. The mean age was 40.80 ± 13.53 included 22 males and 18 females. They were followed 6 to 24 months (mean duration was 13.84 ± 5.79 months). Five (12.5%) cases received ATG because of delayed graft function or rejection, from 126 sPCR tests that was done during follow up, 57 cases (45%) were positive and 69 ones (55%) were negative. PCR test was negative during period of follow up only in 4 (10%) cases. Among positive PCR tests, viral load was less than 100 copy/mL in 41 (72%), 100 to 1000 copy/mL in 13 (23%), and 1000 to 2000 copy/mL in 3 (5%) cases. The last serum creatinine was 1.08 ± 0.36 . There were no significant differences in serum creatinine level between above-mentioned groups. There were no cases with biopsy-proven BKV nephropathy or significant BK replication (plasma DNA-PCR load more than 10000 copy/mL that is presumptive of BKV nephropathy). Despite this situation, we decreased immunosuppressive drug (Mycophenolate Mofetil) in 2 cases with BKV viral load > 1000 copy/mL for prevention of BKV nephropathy.

Conclusions. Among renal transplant recipients, a positive BKV DNA-PCR is common but viral load is usually less than 1000 or even 100 copy/mL. The significant viral load (10000 copy/mL) that indicates BKV nephropathy was not a common finding in our study.