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Dose Rituximab Improve Recurrence of Membranous Nephropathy after Kidney Transplantation, a Case Report

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Introduction. Idiopathic membranous glomerulonephritis is one of the glomerular diseases that are well described to recur after kidney transplantation, with most studies reporting rates between 10 and 45 percent. Unfortunately, there is no definitive therapy for recurrent membranous nephropathy in the graft and affected patients progress to end-stage renal failure at a mean of four years. There are few case reports that the administration of Rituximab is effective in the treatment and alters the course of recurrent disease.

Case Report. A 36-year old male with end-stage renal disease whose primary kidney disease was idiopathic membranous glomerulonephritis underwent living unrelated kidney transplantation and he was maintained on the immunosuppressive regimen: Cyclosporine, Mycophenolate Mofetil, and Prednisolone. Two years later, he developed frank nephrotic syndrome with 8.5 g/d of proteinuria and normal serum creatinine. Allograft biopsy showed recurrence of membranous nephropathy and in addition to Captopril, Losartan and Atorvastatin he received four weekly doses of Rituximab (375 mg/m²). Although the rate of proteinuria has reduced in 1, 3, and 5 months later; however, he still has nephrotic range proteinuria (3.5 to 4.5 g/d).

Conclusions. This case suggests that four weekly doses of Rituximab (375 mg/m²) cannot induce complete remission of recurrent membranous glomerulonephritis after kidney transplantation.

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Assessment of Renal Artery Stenosis in Hypertensive Patients Candidate for Cardiac Catheterization

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Introduction. Renal Artery Stenosis (RAS) is one of the most common and important causes of chronic heart failure as well as chronic kidney disease due to ischemic nephropathy. Aim of the study was to evaluate the prevalence of RAS and its related risk factors in hypertensive patients undergoing coronary angiography.

Methods. In a cross sectional study, between June 2001 and May 2002, all of hypertensive patients candidate for diagnostic cardiac catheterization at Imam Hospital, Ahvaz, Iran; underwent nonselective renal angiography before completion of their coronary angiography procedure. A standardized questionnaire was used to collect demographics, cardiac history, indications for cardiac catheterization and angiographic data.

Results. In overall, 274 hypertensive patients (108 males and 166 females) with Mean age of 60.75 ± 10.9 years were enrolled for the study. From them, 50 patients (18.24%) with mean age of 64 ± 10.1 years had significant RAS (group A) and 224 patients (81.76%) with Mean age of 59.8 ± 11.1 years (group B) had no significant RAS and or normal renal arteries. There was only a significant correlation between two groups in mean age of patients ($P = .016$) and significant RAS had not statistical association with gender ($P = .58$), diabetes mellitus ($P = .65$), severity of hypertension ($P = .49$), hyperlipidemia ($P = .54$) and smoking ($P = .08$).

Conclusions. According to the present study, diabetes mellitus, hyperlipidemia, severity of hypertension, and smoking were not clinical predictors of significant RAS in hypertensive patients' candidate for coronary angiography.

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Evaluation of Gabapentin Effect on Muscle Cramps in ESRD Patients during Hemodialysis

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Introduction. Painful muscle cramps are a common complication during hemodialysis sessions. Hemodialysis-Associated Muscle Cramps (HAMC) can be severe enough to necessitate discontinuation of hemodialysis and therefore it is an important cause of under dialysis. Aim of the present study was evaluation of possible effect of Gabapentin on HAMC.

Methods. In a double blind clinical trial, we compared the possible effect of Gabapentin with a placebo to prevent and or diminish episodes of HAMC in hemodialysis patients who had experienced frequent intradialytic muscle cramps. At the first time, 300 mg of Gabapentin was given before each dialysis session for 4 weeks and then after 2 weeks washout period, placebo was given for 4 weeks to verify the effect of Gabapentin.

Results. In overall, 9 patients (4 men, 5 women; mean age, 54.89 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 ($P = .001$). The intensity of muscle cramps are also decreased in the Gabapentin group ($P = .002$). There was no significant association between HAMC in male and female ($P = .13$), mean age of hemodialysis patients ($P = .45$) and cause of end-stage renal failure ($P > .05$).

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

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Evaluation of Graft Survival Renal Transplant Ward of Razi Hospital, Rasht, North of Iran, From 1999 to 2010

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Introduction. Renal transplantation is the modality of choice for renal replacement therapy in the majority of ESRD patients. The survival of transplant

kidney was improved significantly with introduce of new immunosuppressive regimens. In this study, we evaluated the renal transplant recipients' graft survival in Razi hospital of Rasht in North of Iran, from 1999 to 2010.

Methods. All kidney transplant recipients in our center ($n = 273$) were studied. The demographic data were collected. Then 1-, 5-, and 10-year survival analyzed with analysis survival data and Kaplan-Meier curve. Chi-square test, Independent t test, and Mann-Whitney test were used for analysis of variants.

Results. In the study, 1-, 5-, and 10-year survival was 92.6%, 88%, and 77.5%, respectively. All grafts donated from living donors except 1 case. Delayed graft function significantly correlate with graft survival ($P < .001$).

Conclusions. In this study, 1-year survival was 92% and compared with multicenter study in USA (93.9%) showed good situation in this center. In addition, results of this study about effect of delayed graft function on graft survival are same to a study in Labafinejad hospital from 1985 to 2005.

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Study of the Relationship Between Left Ventricular Mass Index and High Sensitive C-Reactive Protein in Patients Maintained in Hemodialysis of Razi Hospital, Rast, Iran

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Introduction. Cardiovascular disease such as Left Ventricular Hypertrophy (LVH) is common in patients maintained on hemodialysis. So, we evaluate hs-CRP level in hemodialysis patients and compare it with Left Ventricular Mass index (LVMI). The purpose of this study is to determine the relationship between LVMI and hs-CRP in hemodialysis patients.

Methods. An analytical cross sectional study was done in 104 hemodialysis patients. Hs-CRP titration, LVH, LVMI and LVM were evaluated. Finally, results were analysed by statistical analysis t test Student, pierson, one way ANOVA and multiple

regression to determine the relationship between LVMi and other variables.

Results. Sixty-six male patients (63.46%) and 38 female patients (36.54%) with mean age 51.75 ± 15.98 participated in this study. Most of patients were middle-aged (59.6%). 65.4% patients were hypertensive. The mean LVMi was 366.98 ± 120.89 g/m² and mean hs-CRP was 8.55. Ninety percents patients had LVH. One-way ANOVA study showed no relationship between variables. Multiple regressions showed a strongly significant correlation between LVM and hs-CRP ($P = .009$), LVMi and systolic blood pressure (SBP) ($P = .001$). In addition, it showed a slightly significant correlation between LVMi and hs-CRP ($P = .057$).

Conclusions. According to significant correlation between hs-CRP level and LVMi, systolic hypertension and LVMi in patients with LVH, and the same things shown in the other studies it seems that hs-CRP and SBP are independent predictors of cardiac hypertrophy in patients maintained on hemodialysis.

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QT Interval Parameters Alteration in Patients Received Renal Transplantation

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Introduction. Cardiovascular disease is still the most common causes of mortality in patients with end-stage renal disease and renal transplantation (RT). Prolongation of QTmax and QTcd are risk factors of cardiac arrhythmias and mortality. This study evaluated the changes of QT parameters after hemodialysis and RT. In addition, the correlation between these changes and serum electrolytes was studied.

Methods. The mean serum electrolyte and 12 lead ECG were recorded immediately before and after the last dialysis session, and also 2 weeks after kidney transplantation in 34 patients. Each QT interval was corrected for patient heart rate using bazett's formula. The relationship of differences between mean of QT interval parameters (QTd,

QTcd, QTcmax) in groups of pre-hemodialysis, post-hemodialysis, and post renal transplantation (post T), and correlation between these changes and serum electrolytes were analyzed.

Results. Among patients, the corrected maximal QT interval (QTc max) decreased significantly after transplantation comparing the time of pre-hemodialysis ($P = .002$) and post-hemodialysis ($P = .003$). The mean of QTc max decreased significantly between pre-hemodialysis, post-hemodialysis, and post T ($P = .001$). There are significant differences between mean of QTc in patients with normal and abnormal range in group of post-hemodialysis and Post T ($P < .0001$) and Pre-hemodialysis and Post T ($P < .0001$). Only increased corrected calcium ($P = .008$) and decreased phosphor ($P = .009$) level in the group of pre-hemodialysis and post T have significant differences.

Conclusions. In RT recipients, QT max was shorter than hemodialysis patients. This alternation significantly was correlated with corrected calcium and phosphor level.

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Distribution of Albuminuria and Low GFR, Shahreza, Iran

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Introduction. Chronic Kidney Disease (CKD) is becoming a major public health problem worldwide. A remarkable part of health budget is designated annually to control End-Stage Renal Disease (ESRD) in most countries. Managements of ESRD should be provided different renal replacement modalities. Chronic kidney disease increases morbidity and mortality of cardiovascular disease.

Methods. This is a descriptive study in rural area around Shahreza, Iran in 2009. A total of 1400 participants over 30 years old selected in a systematic randomized sampling. Glomerular Filtration Rate (GFR) is used as an index of kidney function and albuminuria is used as an index of kidney damage. GFR was estimated using the simplified Modification of Diet in Renal Disease (MDRD) Study equation.

Results. Based on MDRD, 4.7 percent (men 1.8% and women 6.1%) had GFR less than 60 mL/min/1.73 m². The amount of microalbuminuria and macroalbuminuria were 16.2% (women 16.8% and men 15%). 12.3% had pyuria (14.6% in women and 7.2% in men) and 12.6% had hematuria (14.6% in women and 8.1% in men). GFR less than 60 ml/min/1.73 m² among all age groups and in both sex was significantly different statistically and increased with aging.

Conclusions. Considering the prevalence of CKD needs measures to identify the disease sooner. It requires more active national screening program to identify CKD patients in earlier stages and makes sense to integrate such programs in primary health care.

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Comparison of Three and Two Drugs Inhibition of Renin Angiotensin Aldosterone System (RAAS) in Treatment of Diabetic Nephropathy

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Introduction. According to the clinical guidelines on chronic kidney disease with hypertension, combination therapy with multiple Renin Angiotensin Aldosterone System (RAAS) blockers has been recommended as standard first-line therapy. To date, dual and triple blockade of the RAAS has been evaluated by several investigators. This study aims to compare three (ACEI + ARB + β blocker) and two (ACEI + ARB) directional inhibitions of RAAS in treatment of diabetic nephropathy.

Methods. In an experimental interventional study, 103 diabetic patients without ESRD were recruited in Sina hospital, Tabriz, Iran during one-year period. The patients randomized in two groups: group A received triple blockade of RAAS with ACEI + ARB + β blocker and group B received dual blockade with ACEI + ARB (and placebo). Basal and posttreatment parameters (after six months) including blood pressure, urine albumin, serum BUN, Cr, Na, K and HbA1C and GFR were compared between two groups.

Results. Both studied groups were matched for age, sex and duration of diabetes mellitus. Decrease

of blood pressure, albuminuria, BUN and Cr was significantly more in group A compared with them in group B. The GFR was significantly more increased in group A compared with group B. On the other hand, increasing of serum K and Na was significantly more in patients received triple blockade of RAAS. The frequency of hyperkalemia was significantly higher in group A, at the end of study. The change of HbA1C was not significantly different between two groups.

Conclusions. Based on our results, triple blockade of RAAS is more efficient than dual blockade in prevention of diabetic nephropathy; however, meticulous selection of patients should be considered because of high risk of hyperkalemia following triple blockade of RAAS with the current regime.

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Comparison of Gabapentin and Antihistamins in Treatment of Uremic Pruritus and Its Psychological Problems

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Introduction. Uremic pruritus is commonly experienced by patients suffering advanced chronic renal failure who already are on renal replacement therapy. The mechanism of uremic pruritus is unknown and most treatments are ineffective. Gabapentin is an anticonvulsant that alleviates neuropathic pain. It has shown that this drug may be effective in treatment of uremic pruritus. This study aims to compare Gabapentin and antihistamine in treatment of uremic pruritus and its psychogenic problems.

Methods. In a double-blind randomized clinical trial, 40 patients with uremic pruritus were randomized in two groups in Sina hospital, Tabriz; during a 12-month period. Both groups were matched for age, sex and laboratory serum findings including Ca, P, PTH and Hemoglobin. One group received Gabapentin (100 mg daily initial dose, titrated up to 200 mg, daily; as group G) and the other group received Hydroxyzin (10 mg daily, as group A) for 4 weeks. Visual Analogue Scale (VAS) was used for determining the severity of pruritus at baseline and after intervention. HRQOL questionnaire

was used for determining the quality of life. The parameters were compared between two groups.

Results. Forty patients were enrolled in the study. There were 11 males and 9 females with the mean age of 46.2 ± 12.4 years in group G and 9 females and 11 males, with a mean age of 45.6 ± 12.4 years in group A ($P = .90$). Decrease of pruritus severity was more significant in group G. All domains of quality of life were significantly improved better in patients received Gabapentin compared with who took antihistamine. Pruritus remained in 2 patients (10%) of group G and in 16 patients (80%) of group A ($P < .001$). Complications were documented in 7 (35%) patients of group G versus 10 (50%) patients of group A ($P = .34$). The rate of complications was significantly higher in patients received 200 mg of Gabapentin compared with patients received 100 mg of drug.

Conclusions. According to our results, Gabapentin is more effective than antihistamine in treating of uremic pruritus and its psychogenic problems with no significant side effects. The optimal dose of this drug was 100 mg/d.

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Cystatin C as an Early Marker of Diabetic Nephropathy in Children with Type-1 Diabetes Mellitus

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Introduction. Persistent microalbuminuria is suggested as a sensitive marker to screen for early stages of diabetic nephropathy. We evaluated the correlation between serum cystatin C compared to serum creatinine and microalbuminuria.

Methods. A case-control study conducted between September 2008 and February 2011 in an out-patient clinic of endocrinology. A hundred patients with stable diabetes mellitus type-1, age between 2 to 18 years old with no history of recent infection were entered in the study. They compared with 66 sex- and age- matched healthy children. The exclusion criteria were severe renal insufficiency, unstable conditions, associated any other endocrine disorders, and patients who received any medication other than insulin. Fasting blood sample was taken for HbA1C, serum creatinine, and Cystatin C. A

24-hour urine aliquot was collected to measure microalbumin, creatinine, and volume. Glomerular filtration rate was estimated by using 24-hour urinary collection for creatinine and zapittini formula. The data are expressed as mean \pm SD. Student's *t* test and ANOVA test were used to compare means. ROC curve was used to compare correlation. The non-parametric tests were used for variables that were not normally distributed. $P < .05$ was considered significant.

Results. From 98 children with diabetes mellitus, 27.6% had microalbuminuria who suffered longer from diabetes mellitus ($P = .03$). The mean Cystatin C (mg/L) was 0.87 ± 0.32 in patients with diabetes mellitus (DM), 0.85 ± 0.45 in those with DM and microalbuminuria, and 0.94 ± 0.18 in controls ($P = .22$). The mean serum creatinin (mg/dL) was significantly higher in diabetic patients (0.92 ± 0.26 in group with microalbuminuria and 0.85 ± 0.2 in those without microalbuminuria) than controls (0.72 ± 0.14), $P < .001$. The number of diabetic patients found to have hyperfiltration was not statistically different between two methods of calculating GFR ($P > .05$). In contrast, GFR based Cr detected higher rate of chronic kidney disease less than 60 in DM ($P = .02$). ROC curve illustrated that serum creatinine and Cystatin C but not the calculated GFR were significantly different in cases and controls ($P < .05$). This difference was negligible for early detection of microalbuminuria in diabetic patients.

Conclusions. There was no correlation between Cystatin C and microalbuminuria. Estimated GFR based 24-hour urinary collection can detect higher rate of GFR < 60 mL/min/1.73 m².

P211

Elevated Serum Levels of Vitamin D in Infants With Urolithiasis

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Introduction. There is little information about the elevated levels of vitamin D as a possible risk factor for urolithiasis in infancy.

Methods. In this case-control study, we evaluated the metabolic risk factors including serum levels of 25-hydroxy-vitamin D3 for urolithiasis in infants. Thirty-six patients with urolithiasis ranging in age from 2 months to 2 years were included in this study as cases. Thirty-six age- and sex-matched infants without urolithiasis were also enrolled as a control group. For cases, random urine sample was tested for levels of calcium, phosphorous, oxalate, citrate, uric acid, sodium, potassium, magnesium, and creatinine. Furthermore, nitroprusside test was performed on the random urine samples of the cases. Serum levels of potassium, BUN, creatinine, alkaline phosphatase, 25-hydroxy-vitamin D3, parathyroid hormone, calcium, phosphorous, and uric acid were also measured in all cases. Moreover, blood gas analysis was done for all cases. Only serum levels of 25-hydroxy-vitamin D3 were measured in the control group.

Results. Positive family history of urinary stone was found in 80.6% of cases. Serum levels of 25-hydroxy-vitamin D3 were significantly higher in cases versus controls (33.85 ± 14.78 ng/mL versus 18.26 ± 7.43 ng/mL, $P < .001$). Furthermore, 9 cases were found to have hypercalcemia, 3 of these cases also had hypervitaminosis D. Moreover, 27.8% of the cases had hypercalciuria, 16.7% hypocitraturia, 8.3% hypomagnesuria and 2.8% hyperoxaluria; however, uricosuria and cystinuria were not found in cases. In addition, 52.8% of the cases had at least one metabolic disorder and one case had two metabolic disorders.

Conclusions. High serum levels of vitamin D may play an important role in the pathogenesis of renal stone formation in infants. Therefore, we recommend evaluation of serum levels of vitamin D in infants with urolithiasis and hypercalcemia.

P212

Renal Involvement in Patients with Multiple Myeloma, Its Causes and Patient Survival

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Introduction. Multiple myeloma (MM) is a clonal B cell malignancy producing monoclonal protein and is associated with lytic bone lesions, renal impairment (in about 20% to 40%), and myelosuppression.

Methods. We prospectively registered newly diagnosed multiple myeloma patients with renal involvement from 2005 to 2010 who were admitted in nephrology unit of Shariati hospital. Their kidneys were biopsied after signing informed consent. Demographic, paraclinical data, and patient survival were evaluated.

Results. Thirteen patients were registered. The mean age was 57.31 ± 12.83 years. Two patients were younger than 40 years. Eight patients were male and five females. The mean serum Creatinine was 5.21 ± 4.36 mg/dL at presentation. The mean serum calcium was 10.52 ± 1.23 mg/dL. The mean serum hemoglobin was 8.22 ± 2.16 g/dL. The mean daily proteinuria was 4081 ± 3265 g/d. The kidney biopsy diagnosis of seven patients who signed informed consent for taking biopsy were six myeloma cast nephropathy and one amyloidosis. Based on Durie-Salmon staging, stage IIIB was diagnosed in eleven patients and stage IIB in two patients. During median follow up of 15.5 months (range, 7 to 38 months), four patients were died, four patients were alive, and information for five patients were not available. Four patients who died were on hemodialysis late on their disease course. Four patients who were alive had some degrees of decreased renal function. The mean patient survival was 19.75 ± 12.58 months, while mean patient survival of myeloma patients according to database of hematology center was higher.

Conclusions. The most common cause of renal involvement is myeloma cast nephropathy. Renal involvement can adversely affect patient survival.

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Evaluation of the Sensitivity of Nitrite Test and Pyuria for Detecting Urinary Tract Infection

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Introduction. Since a proper Urine Culture (UC) should be done three times, the criteria for use of Urine Analysis (U/A) should be optimized. The aim of this study were to determine the sensitivity of the standard U/A as a screening test for Urinary Tract Infection (UTI), and to determine the clinical situation that necessitates the collection of a urine culture regardless of the U/A result and to estimate the sensitivity of nitrite test and pyuria as a screening test.

Methods. Medical records of 400 patients older than 2 years with positive UC reviewed retrospectively. A U/A result was considered positive in case of positive nitrite or pyuria (5 WBC/hpf). Positive UC was defined as more than 100,000 colonies of uropathogenic bacteria per milliliter of urine. The dipstick and urinalysis data were compared with UC results.

Results. 79.5% was female. The greatest prevalence of UTI (29%) was found among 35 to 65 years old. Out of 400 patients with positive urine culture, 327 (82%) had a positive U/A, 206 of these (51%) had positive nitrite, and 251 (62.8%) had pyuria. The sensitivity of the U/A was 81%. The sensitivity values of nitrite and pyuria in men were 54% and 77%, and in women 54% and 60%, respectively. Sensitivity of U/A in men and women were 88% and 80%, respectively. *Escherichia Coli* was the predominant isolate (78.75%). Nitrofurantoin, Ceftriaxone, and Co-trimoxazole showed 56%, 41.5%, and 31.5% in vitro sensitivities, respectively.

Conclusions. The limited sensitivity of the U/A for detecting a UTI requires a urine culture be obtained in some patients regardless of U/A result. First line use of Co-trimoxazole and Nitrofurantoin for UTI should be reviewed and since high resistance rates were obtained for all antibiotics, antibiogram should be considered for treatment of UTI.

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Parapharyngeal Unicentric Castleman Disease With Nephrotic Syndrome, a Case Report

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Introduction. Castleman Disease (CD) is a rare lymphoproliferative disorder, first described by Dr Benjamin Castleman in 1956. It can be associated with nephrotic syndrome and acute renal failure.

Case Report. A 27-year old man presented with edema and hypertension. In initial evaluation for edema, 24-hour urine collection revealed 8200 mg/24h protein. Evaluation for secondary causes of nephrotic syndrome were negative. Renal biopsy showed diffuse mesangial lesion with segmental subepithelial deposition. Following the patient for nephrotic syndrome, he experienced the feeling of a mass in his pharynx and deterioration of previous snoring, and then a neck MRI revealed a mass. Pathological report of incomplete excisional biopsy showed hyaline vascular type of CD. As in our case, unicentric CD typically affects young patients less than 30 years of age. Renal manifestations such as proteinuria, hematuria, and renal dysfunction, may occur in CD; however, a nephrotic syndrome is rare. In our patient, mass located within right parapharyngeal and right carotid space and right prevertebral region that made our case more unusual than the others, because the most common site of unicentric type is the mediastinum and fewer than 10% of cases arise in the head and neck. Complete surgical excision is the treatment of choice for CD but in our patient the location of the mass made it inoperable so corticosteroid was initiated. Although mass was not removed completely but proteinuria improved after medical treatment and follow up MRI through 5 years revealed no change in mass size.

Conclusions. Castleman disease is a rare cause of nephrotic syndrome that requires a high index of suspicion for diagnosis. Medical therapy can be considered as an alternative to surgery for unicentric CD that is not suitable for complete resection.

P215

Correlation of Metabolic Acidosis With Serum Albumin Levels and Protein Catabolic Rate (nPCR) in Hemodialysis Patients

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Introduction. Despite acceptable hemodialysis protocols, a large majority of hemodialysis patients still have predialysis serum bicarbonate levels well below normal values. The purpose of this study was to evaluate the significance of factors affecting predialysis serum bicarbonate concentrations in hemodialysis patients.

Methods. In this cross-sectional study, we analyzed data from patients who had been on hemodialysis for at least 6 months. Patients' demographic features, medications, and intercurrent medical conditions were recorded. Data including blood biochemistry, body mass index (BMI), dialysis adequacy, Ca-P product, and normalized-protein catabolic rate (nPCR) were collected.

Results. Fifty-three patients (29 males and 24 females) with age of 44.67 ± 18.38 years were included in this study. Univariate analysis using Pearson correlation showed that values of predialysis serum bicarbonate levels correlated positively with age ($r = 0.355, P = .009$), Hb ($r = 0.44, P = .02$), serum ferritin ($r = 0.293, P = .033$), Ca-P product ($r = 0.301, P = .029$), and negatively with nPCR ($r = -0.649, P < .0001$) and serum creatinine ($r = -0.508, P < .001$). There was no any significant correlation between serum bicarbonate and serum levels of phosphorus, calcium, cholesterol, albumin, and PTH. We also found no correlation between predialysis serum bicarbonate with Kt/V and BMI. Multivariate analysis using multiple regression showed that only nPCR ($P < .0001, \beta = -0.648$) and Ca-P product ($P = .007, \beta = -0.286$) are significant prediction of serum bicarbonate (R^2 of model = 0.507) which means that almost half of the serum bicarbonate variance can be explained by these two variables.

Conclusions. In this study, nPCR and Ca-P product are important predictive factors affecting predialysis serum bicarbonate concentrations in hemodialysis patients.

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Evaluation of Correlation Between Level of Serum Zinc With Serum Lipid Levels in Hemodialysis Patients

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Introduction. Hyperlipidemia is common in chronic renal failure. It has been demonstrated that both decrease and increase of serum zinc, influence on plasma lipid profile. In this study we have evaluated the correlation between serum zinc level with serum lipid levels in hemodialysis patients.

Methods. This cross sectional study was performed on 3 groups consist of hemodialysis patients (30 cases), hyperlipidemic control group (20 cases), and healthy control group (20 cases) in Imam Reza hospital, Mashhad. Levels of zinc, cholesterol, LDL, HDL, and TG were measured. Serum zinc was measured in fasting status by spectrophotometry.

Results. Serum zinc level in hemodialysis patients was significantly lower than two other groups. Serum zinc level in hyperlipidemic control group was also significantly lower than healthy control group. In hemodialysis patients group there was a reverse significant correlation between serum zinc with serum HDL ($r = -0.429, P = .02$), but no significant correlation was seen between serum zinc with serum cholesterol, TG, and LDL. But in hyperlipidemic control group, a significant correlation was seen between serum zinc with cholesterol ($r = 0.570, P = .009$) and LDL ($r = 0.592, P = .006$).

Conclusions. In hemodialysis patients there was a significant reverse correlation between serum zinc levels with serum HDL but no significant correlation was seen between serum zinc levels with serum cholesterol, TG, and LDL.

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Severe High Anion Gap Metabolic Acidosis in Pregnancy

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Introduction. Ketoacidosis is commonly occurred in uncontrolled diabetes mellitus patients. However, severe metabolic acidosis due to starvation is rarely reported in literature. We describe a case of ketoacidosis in a 27-year old pregnant female at week 30 of gestation, with normal former pregnancy. She was admitted to hospital with a 24-hour history of vomiting (more than 30 times in a day). There was no additional pain or symptoms.

Case Report. On admission, she was normotensive. Blood glucose was 111 mg/dL, serum creatinine

0.6 mg/dL, and urine dipstick showed acetone (3+) without Proteinuria. Urine pH was 6. Blood gas analysis showed severe metabolic acidosis with a PH of 7.24 (HCO_3^- 7.9 meq/L, BE -14, PCO_2 15.2 mmHg, PO_2 72 mmHg). Then, we checked serum electrolytes. Serum chloride was 102 mg/dL, Na = 135 meq/L, K = 5 meq/L. Based on these data, there was high anion gap metabolic acidosis in patient. After 3 days hydration with dextrose in saline, gradually blood gas improved as on discharge it showed pH 7.44, PCO_2 = 44 mmHg, HCO_3^- = 28 meq/L, and her vomiting had been disappeared.

Conclusions. We conclude that in this case acidosis was due to starvation and inhibition of insulin secretion that led to ketone production. After correction of dehydration by glucose replacement, she was improved and discharged.

P218

Prevalence of Hypertension in Young Adult in North-East of Iran

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Introduction. Hypertension is one of the main public health problems and is associated with increased risk of cardiovascular diseases. The incidence of hypertension is growing in all age groups including younger people. In some studies it is reported that the level and pattern of blood pressure among adolescents vary in different population. So, we tried to find out prevalence of hypertension in young adult in north-east of IRAN.

Methods. Population based descriptive analysis was done in 3612 people between 20 to 29 years old who were coming to three health medical centers for evaluation that routinely has been performed before marriage in Iran. Blood pressure was monitored in all of them, and patients with elevated blood pressure followed for further monitoring in the next couple of weeks. Then a case-control study was done in all subjects with elevated blood pressure. A standard protocol for assessing elevated blood pressure consisted of 24-hour ambulatory monitoring, detailed interviews, and biochemical laboratory tests were performed for them.

Results. Prevalence of high blood pressure was 1.4% (49) at the first visit that hypertension confirmed only in 1% (35) patients at the next evaluation. Twenty four-hour ambulatory monitoring was revealed there was white coat hypertension in 40% (14) of them. There was significant association among blood pressure with gender, body mass index (BMI), alcohol abuse, and amount of daily tea drinking ($P < .05$), but we didn't find this correlation among sleep pattern, smoking, addiction, and family history of hypertension with blood pressure ($P > .05$).

Conclusions. This study provides population based data on hypertension in young adults. While the prevalence of hypertension is low compared to older age groups, it remains important to detect patients earlier, as secession of alcoholic drinks and losing weight may help to have better control of blood pressure and may be associated with better survival.

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Effectiveness of Cognitive-Existential Group Therapy on Increasing Hope In Women Under Maintenance Hemodialysis

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Introduction. Hopefulness has been introduced as one of the most important predicting factors of compliance in patients under maintenance hemodialysis and has a critical role in increasing patient adaptation to the social and mental consequences of this treatment modality. This study was conducted to assess the effectiveness of cognitive-existential group therapy on increasing hopefulness in women under maintenance hemodialysis.

Methods. The study is a clinical trial on 22 maintenance hemodialysis women, 22 to 55 years of age, with no previous recorded history of

psychiatric diseases. The minimum education level was primary school. The patients were randomly divided into case and control groups. Personal characteristics questionnaire and Miller hope scale (Miller, Powers, 1988) were filled before and after intervention. Miller questionnaire evaluates 48 aspects of hope, with scores between 48 (total hopelessness) to 280 (complete hopefulness). Treatment intervention included an integration of existential and cognitive therapy, consisting 12 sessions of 90 minutes group therapy, twice per week. The sessions were designed to address the main predictors of human anxiety including loneliness, responsibility, uncertainty, love, and death; and acceptance of these anxieties. In addition, it was used to diagnose and treat the cognitive biases leading to hopelessness. Pre- and post-intervention tests were performed and compared with paired *t*-test, using SPSS 15 software.

Results. There was a significant difference in hope score in the case group before and after intervention with cognitive existential group therapy (164.75 ± 21.41 versus 189.33 ± 33.91 , respectively; $P < .01$). Hope score did not change significantly in the control group over time (162.0 ± 28.29 versus 150.9 ± 27.72 , $P > .05$).

Conclusions. This study showed that cognitive existential group therapy can increase hopefulness in maintenance hemodialysis patients. We suggest using this method in hemodialysis wards to decrease hopelessness in maintenance hemodialysis patients, which can lead to better compliance with dialysis and increase in quality of life.

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Ambulatory Blood Pressure Monitoring in Children and Adolescents with Type-1 Diabetes Mellitus and Its Relation to Diabetic Control and Microalbuminuria

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Introduction. Diabetes mellitus is now considered as the major cause of end-stage kidney failure and

hypertension is one of the main determinants of renal disease progression. The aim of this study was to assess the BP parameters by ABPM in children and adolescents with type-I diabetes mellitus and its relation to microalbuminuria and diabetic control.

Methods. A total of 106 children and adolescents with type-I diabetes mellitus with at least 2 years of diabetic duration who were followed at the endocrine clinic, Shiraz university of medical sciences, were eligible for this study. Out of 106 patients who met the enrolment criteria, 81 (76.4%) patients completed the study. Urinary microalbumin was determined from 3 separate 24-hour urine samples, collected within at least 1-month interval. Venous blood sample for testing hemoglobin A1C levels was taken from each study participant 3 times within at least 3 months intervals. Blood pressures were taken via both auscultation method and ABPM. To compensate for the differences in age and body size, the blood pressure records were indexed by dividing the measured value into age, sex, and height specific 95th BP Percentile, using standardized tables. The results were expressed as frequencies, or mean and standard deviation. Comparison of means and proportions was performed by Student *t* test and chi-square, respectively. Pearson correlation coefficient was used to determine the association between the subgroups. A $P < .05$ was considered as statistically significant.

Results. The mean age of patients was 14.3 ± 4 (7 to 20) years, and duration of diabetes was 5.7 ± 3.2 (2 to 16) years. The prevalence of hypertension (HTN) based on ABPM was 28.4% while by casual method was 32.1%. The pattern of hypertension was as follows: Mean systolic HTN 27.2%, Mean diastolic HTN 11.2%, Day systolic HTN 17.3%, Day diastolic HTN 6.2%, Night systolic HTN 30.9%, and Night diastolic HTN 29.7%. The systolic and diastolic BP loads were 33.4% and 27.2%, respectively. 70.4% of the patients were non-dipper. 12.4% of them had masked HTN and 3.7% had WCH. The prevalence of microalbuminuria was 34.6% and that of abnormal HbA1c was 82.7%. Also, there was no correlation between HTN and both microalbuminuria and HbA1c and also between diabetes duration and HbA1c. Moreover, no significant correlation was found between diabetes duration and microalbuminuria ($P = .08$).

Conclusions. In conclusion, the current study revealed a high prevalence of abnormal blood pressure profile, poor diabetic control, and microalbuminuria in diabetic patients. Regarding no association between hypertension, hemoglobin A1C and microalbuminuria prospective longitudinal studies considering the other major risk factors particularly genetic factors that have impact on tracking the progression to DN are recommended.

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Urinary Lipocalin-II in Patients With SLE and Its Association With Lupus Nephritis Activity

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Introduction. Systemic Lupus Erythematosus (SLE) is a common type of rheumatologic diseases and lupus nephritis is one of its important outbreaks. Lupus nephritis is the main cause of mortality and disability in SLE patients. Therefore, achieving to a reliable and noninvasive method to evaluate disease activity repeatedly seems to be necessary. This study investigates using of lipocalin-II as a urinary biomarker in diagnosis of lupus nephritis. **Methods.** Patients with SLE were enrolled and divided into two groups, patients with and without renal involvement. For each group, level of lipocalin-II in a fresh urine sample was measured by ELISA and reported as lipocalin-II/creatinine ratio. The results were analyzed and compared with the results of renal biopsy.

Results. Lipocalin-II/creatinine ratio was higher in patients with lupus nephritis in comparison with patients without renal involvement ($P = .030$). Variance analysis showed that lipo-II/cr is similar in different classes of lupus nephritis ($P = .275$).

Conclusions. Accordingly, we suggest urinary lipocalin-II for diagnosis of lupus nephritis, but renal biopsy is the gold standard to determine the severity of lupus nephritis.

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Evaluating of Renal Function by Serum Cystatin C Level in Patients With Liver Cirrhosis

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Introduction. Renal function in patients with cirrhosis has prognostic significance. Considering reduced muscle mass in patients with chronic liver diseases, the amount of serum creatinine cannot evaluate Glomerular Filtration Rate (GFR) accurately. Cystatin C is not affected by muscle mass; therefore, it may be an appropriate marker for GFR measurement.

Methods. Symptomatic cirrhotic patients admitted to liver clinic in Imam Reza hospital were studied. At the beginning, a blood sample was taken from all patients for Cystatin C, Creatinine, Urea, and 24-hour urine. GFR was measured based on UV/P formula, mean of urea and creatinine clearance, serum Cystatin C and creatinine in comparison with GFR were assessed. The evaluation of patients continued when GFR was below 80 mL/min.

Results. In study using Receiver Operating Curve (ROC) to delineate decreasing renal function in cirrhotic patients, Cystatin C is better biomarker in compared with serum Creatinine (sensitivity = 87.5%, specificity = 94.4%, positive predictive value = 95.4%, and negative predictive value = 85% were reported for Cystatin C).

Conclusions. Regarding to sensitivity of Cystatin C in contrast with other biomarkers, using of Cystatin C can be suggested as a renal function predictor in cirrhotic patients.

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Evaluation of Prognostic Factors in Long-Term Follow Up of Nephrotic Syndrome

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Introduction. Idiopathic nephrotic syndrome is the most common type of nephrotic syndrome in children. Despite initial response to steroid, majority of them will have episodes of relapses. In this study, risk factors of subsequent relapses are studied.

Methods. Medical records of all children with nephrotic syndrome who were admitted in our center between 2000 to 2007 were reviewed. Our inclusion criteria were age range of 1 to 12 years at the onset of nephrotic syndrome, initial response to steroid during the first 4 weeks of treatment, optimal medical records, and at least 2 years of regular follow up after initial diagnosis. The effect of first year relapse (s), duration of remission before relapse, duration of disease, age, sex, hematuria, and renal failure on the subsequent relapses were evaluated.

Results. Sixty-five children met the inclusion criteria. The mean age at the onset of disease was 5.45 ± 3.72 . They were divided into two subgroups according to age of onset of their disease: group 1 to 4 years old (38 patients) and group 5 to 12 years old (27 children). According to the relapses in the first year, they divided into 3 subgroups: non-relapsers (26.2%), infrequent relapsers (52.3%), and frequent relapsers (21.5%). Statistical analysis was performed with t-test, one-way ANOVA, and chi-square test. Mean of total relapses in non-relapser, infrequent relapser, and frequent relapser were 0.88 ± 1.61 , 5.35 ± 2.9 , and 9.07 ± 2.64 , respectively ($P < .001$). Mean of the duration of remission before relapse was 14.11 months and correlation coefficient with total relapses was -0.618 ($P < .001$). Mean duration of the disease was 4.73 years and correlation coefficient with total relapses was 0.347 ($P = .005$). Children with the onset of the disease between 1 to 4 years had higher number of relapses but did not reach statistical significance. In addition, there was no correlation between sex, microscopic hematuria, and azotemia on admission with the number of subsequent relapses.

Conclusions. We conclude that number of relapses within the first year, duration of remission before relapse, and duration of disease are risk factors for subsequent relapses and age, sex, hematuria, and azotemia have no significant effect on subsequent relapses.

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Glomerulocystic Kidney Disease Presenting in an Adult Patient, a Case Report

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Introduction. Glomerulocystic Kidney Disease (GCKD) is a distinct histopathological entity, introduced in 1976 by Taxy and Filmer. The term was applied to a heterogeneous group of disorders with variable degrees of cystic dilatation of bowmans spaces. These cortical cysts are grossly seen in subcapsular area of renal cortex. There are different diseases with glomerular cysts including Autosomal Dominant Polycystic Kidney Disease (ADPKD), cystic renal dysplasia, Autosomal Recessive Polycystic Kidney Disease (ARPKD), Zellwegers cerebral-renal-hepatic syndrome, and tuberous sclerosis. The size of kidneys can be normal or hypoplastic in familial GCKD. Therefore, GCKD must be diagnosed by excluding other cystic renal disorders. GCKD is also known to be encountered as sporadic condition in infants and young children with renal failure.

Case Report. Here, we present a case of sporadic GCKD in an adult patient presented with malaise and found to have high serum Creatinine. Renal biopsy was done and showed severe dilation of bowman capsule with retracted glomerular tufts. The tubules between cystic glomeruli were mostly atrophic in more than 70% of the specimen. Glomerulocystic kidney disease was diagnosed for the patient. She is under dialysis now.

Conclusions. Glomerulocystic kidney disease is an uncommon type of cystic renal disease that can also be seen in adult patient and should be considered in differential diagnosis of chronic renal failure.

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Kaposi Sarcoma in a Patient With Membranous Glomerulonephritis

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Introduction. Kaposi sarcoma and membranous Glomerulonephritis (MGN) is a rare coincidence that has been reported only in one case. Here, we report a case of MGN in relation to Kaposi sarcoma.

Case Report. A 42-year old man referred to our hospital due to severe edema and purple papules

on abdominal skin. Ten months before admission, he had renal biopsy with the report of stage 2 MGN with mesangial proliferation. There were no sign of secondary MGN after complete workup on his first hospital admission. Six months later, patient received Prednisolone (60 mg) and Cyclosporine (300 mg) daily due to rise in serum creatinine and proteinuria. Skin lesions were appeared two months after immunosuppressive therapy. There were erythematous plaques on the skin of abdomen and legs that turned to dark papules gradually. He had 1500 mg/dL proteinuria with hypoalbuminemia and

serum creatinine 1.8 mg/dL. Skin biopsy showed kaposi sarcoma. Immunosuppressive therapy stopped. There were not any visceral involvements. Skin lesions were spread and became infected. The patient received 6 sessions of chemotherapy with Paclitaxel (Taxol). Four months after chemotherapy he had no complaints. Serum creatinine was 1.1 mg/dL.

Conclusions. Although secondary MGN due to malignancies is well established in literature but kaposi sarcoma in a patient with MGN is rare coincidence.