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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13th International Congress of Nephrology, Dialysis, and Transplantation
YAZD 2011

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Abstracts

13th International Congress of Nephrology, Dialysis, and Transplantation
YAZD 2011

<table>
<thead>
<tr>
<th></th>
<th>First Day</th>
<th>Second Day</th>
<th>Third Day</th>
<th>Forth Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral Presentations</td>
<td>2</td>
<td>18</td>
<td>38</td>
<td>58</td>
</tr>
<tr>
<td>Poster Presentations</td>
<td>7</td>
<td>24</td>
<td>44</td>
<td>61</td>
</tr>
</tbody>
</table>

70 Authors’ Index
### Oral Presentations

**08:00 – 09:00**

| Session | Presentation Title | Abstract
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>O101</td>
<td>Monfared A: The Survey of Diastolic Function Changes in ESRD Patients Before, 3, and 6 Months After Kidney Transplantation in Razi Hospital, Rasht, Since 2008 to 2009</td>
<td>2–4</td>
</tr>
<tr>
<td>O102</td>
<td>Sadeghi M: Strong Association of Phenylalanine and Tryptophan Metabolites With Activated Cytomegalovirus Infection in Kidney Transplant Recipients</td>
<td></td>
</tr>
<tr>
<td>O103</td>
<td>Khatami MR: Predictive Value of Neutrophil Gelatinase-Associated Lipocalin (NGAL) in Early Prognostic of Contrast-Induced Nephropathy After Angioplasty-Angiography</td>
<td></td>
</tr>
<tr>
<td>O104</td>
<td>Mahdavi-Zafarghandi R: Effects of Kidney Transplantation on Early and Late Post Transplant Prostate Specific Antigen and Testosterone Levels</td>
<td></td>
</tr>
<tr>
<td>O105</td>
<td>Shahidi S: Comparison Between the Effects of Calcitriol and Cholecalciferol on Bone Mineral Density of Renal transplant Patients</td>
<td></td>
</tr>
</tbody>
</table>

**14:30 – 15:20**

| Session | Presentation Title | Abstract
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>O201</td>
<td>Asgari M: Clinico-Pathological Findings in Iranian Elderly Kidney Patients, a Case Series Study</td>
<td>4–6</td>
</tr>
<tr>
<td>O202</td>
<td>Najafi F: Relation Between Serum Homocysteine Level and Amount of Albuminuria in Type-2 Diabetes Mellitus</td>
<td></td>
</tr>
<tr>
<td>O203</td>
<td>Doustar Y: Anti-Apoptotic Effect of Atorvastatin in Experimental Nephropathy Induced by Isoproterenol in Rats</td>
<td></td>
</tr>
<tr>
<td>O204</td>
<td>Fathi M: Human Genomic Alterations Impacting the Prognosis of Renal Cell Carcinoma</td>
<td></td>
</tr>
</tbody>
</table>

### Poster Presentations

**09:00 – 12:00**

| Session | Presentation Title | Abstract
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>P101</td>
<td>Beladi-Mousavi SS: Motivations of Non-Related Living Kidney Donors in Khuzestan Province, Iran</td>
<td>7–16</td>
</tr>
<tr>
<td>P102</td>
<td>Beladi-Mousavi SS: The Protective Effect of Theophylline in Cisplatin Nephrotoxicity</td>
<td></td>
</tr>
<tr>
<td>P103</td>
<td>Beladi-Mousavi SS: Hepatitis B Infection in ESRD Patients in Khuzestan Province, Iran</td>
<td></td>
</tr>
<tr>
<td>P104</td>
<td>Yousefi-Chajian P: Factors Associated With Post-Streptococcal Glomerulonephritis, Related Encephalopathy</td>
<td></td>
</tr>
<tr>
<td>P105</td>
<td>Noshad H: Severe Heart Failure Is Not an Absolute Contraindication for Kidney Transplantation</td>
<td></td>
</tr>
<tr>
<td>P106</td>
<td>Noshad H: Neuropathy in Type 1 Diabetic Renal Transplanted Patients</td>
<td></td>
</tr>
<tr>
<td>P107</td>
<td>Momeni A: The Comparison of High Flux and Low Flux Membrane on Pulmonary Function Test and Oxygen Saturation in Hemodialysis Patients</td>
<td></td>
</tr>
<tr>
<td>P108</td>
<td>Momeni A: Comparison of Three Methods of Contrast Nephropathy Prophylaxis in Azotemic Patients</td>
<td></td>
</tr>
<tr>
<td>P109</td>
<td>Momeni A: Comparison of Mood Depression Disorders and Anxiety in Hemodialysis Patients Versus Renal Transplant Patients in Shahrekord, Iran</td>
<td></td>
</tr>
<tr>
<td>P110</td>
<td>Emami Naini A: Metabolic Evaluation In Patients With Kidney Stone, A Report From Isfahan, Iran</td>
<td></td>
</tr>
<tr>
<td>P111</td>
<td>Emami Naini A: Effects of Carnitine Supplement on Dyslipidemia and Anemia in Hemodialysis Patients</td>
<td></td>
</tr>
<tr>
<td>P112</td>
<td>Ossareh S: Hypophosphatemia After Renal Transplantation, a Single Center Study</td>
<td></td>
</tr>
<tr>
<td>P113</td>
<td>Ossareh S: Drug Compliance in Hemodialysis Patients, Correlation With Depression, Quality of Life, and Medical Management</td>
<td></td>
</tr>
<tr>
<td>P114</td>
<td>Ossareh S: Renal Biopsy Findings in Iran, Case Series Update From a Referral Kidney Center</td>
<td></td>
</tr>
<tr>
<td>P115</td>
<td>Valavi E: The Sensitivity and Specificity of Urinary IL-8/Cr Ratio to Determination of Acute Pyelonephritis</td>
<td></td>
</tr>
<tr>
<td>P116</td>
<td>Dormanesh B: Hematuria Due to March Among Soldiers of Central Military Police</td>
<td></td>
</tr>
<tr>
<td>P117</td>
<td>Sabzghabaei F: Primary Aldosteronism on Essential Hypertension, a Case Report</td>
<td></td>
</tr>
<tr>
<td>P118</td>
<td>Sharifian M: Urinary Endothelin-1 Level in Children With Hydronephrosis</td>
<td></td>
</tr>
<tr>
<td>P119</td>
<td>Miladipour AH: Plasma BKV PCR After Kidney Transplantation</td>
<td></td>
</tr>
</tbody>
</table>
### Second Day, Wednesday, November 23

#### Oral Presentations

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:00 – 09:00</td>
<td>Therapeutic Apheresis and Nephrologists</td>
<td>Siami GA</td>
</tr>
<tr>
<td></td>
<td>Clinical Presentation and Plasma Cytokine Levels of Hantavirus Infected Patients in Southwest Germany</td>
<td>Sadeghi M</td>
</tr>
<tr>
<td></td>
<td>Bladder Dysfunction in Children With Nocturnal Enuresis</td>
<td>Maseri M</td>
</tr>
<tr>
<td></td>
<td>CRIB, CRIB II, SNAP, SNAP II and SNAP-PE Scoring Systems and RIFLE Criteria in Critically Ill Neonates With Acute Renal Failure</td>
<td>Mohkam M</td>
</tr>
<tr>
<td>14:30 – 15:20</td>
<td>Long-term Outcome of Renal Transplantation in Patients With Familial Mediterranean Fever Amyloidosis, a Single Center Experience</td>
<td>Abediazar S</td>
</tr>
<tr>
<td></td>
<td>Comparison of Immediate Renal Dysfunction in Split and Partial Liver Transplantation Versus Full Size Liver Transplantation in Shiraz Transplant Center, Iran</td>
<td>Jafari L</td>
</tr>
<tr>
<td></td>
<td>The Predisposing Factors of Acute Renal Failure in Scorpion Stung Children</td>
<td>Valavi E</td>
</tr>
<tr>
<td></td>
<td>Efficacy of Vitamins C, E and Their Combination for Treatment of Restless Legs Syndrome in Hemodialysis Patients; a Randomized, Double-Blind, Placebo-Controlled Trial</td>
<td>Fallahzadeh MK</td>
</tr>
<tr>
<td></td>
<td>Auditory Disorders in Children With End-Stage Renal Disease</td>
<td>Mortazavi F</td>
</tr>
</tbody>
</table>

#### Poster Presentations

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dose Rituximab Improve Recurrence of Membranous Nephropathy after Kidney Transplantation, a Case Report</td>
<td>Beladi-Mousavi SS</td>
</tr>
<tr>
<td>Assessment of Renal Artery Stenosis in Hypertensive Patients Candidate for Cardiac Catheterization</td>
<td>Beladi-Mousavi SS</td>
</tr>
<tr>
<td>Evaluation of Gabapentin Effect on Muscle Cramps in ESRD Patients during Hemodialysis</td>
<td>Beladi-Mousavi SS</td>
</tr>
<tr>
<td>Evaluation of Graft Survival Renal Transplant Ward of Razi Hospital, Rasht, North of Iran, From 1999 to 2010</td>
<td>Monfared A</td>
</tr>
<tr>
<td>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</td>
<td>Monfared A</td>
</tr>
<tr>
<td>QT Interval Parameters Alteration in Patients Received Renal Transplantation</td>
<td>Monfared A</td>
</tr>
<tr>
<td>Distribution of Albuminuria and Low GFR, Shahreza, Iran</td>
<td>Barahimi H</td>
</tr>
<tr>
<td>Comparison of Three and Two Drugs Inhibition of Renin Angiotensin Aldosterone System (RAAS) in Treatment of Diabetic Nephropathy</td>
<td>Noshad H</td>
</tr>
<tr>
<td>Comparison of Gabapentin and Antihistamins in Treatment of Uremic Pruritus and Its Psychological Problems</td>
<td>Noshad H</td>
</tr>
<tr>
<td>Cystatin C as an Early Marker of Diabetic Nephropathy in Children with Type-1 Diabetes Mellitus</td>
<td>Hooman N</td>
</tr>
<tr>
<td>Elevated Serum Levels of Vitamin D in Infants With Urolithiasis</td>
<td>Fallahzadeh MH</td>
</tr>
<tr>
<td>Renal Involvement in Patients with Multiple Myeloma, Its Causes and Patient Survival</td>
<td>Soleymanian T</td>
</tr>
<tr>
<td>Evaluation of the Sensitivity of Nitrite Test and Pyuria for Detecting Urinary Tract Infection</td>
<td>Saghafi H</td>
</tr>
<tr>
<td>Parapharyngeal Unicentric Castleman Disease With Nephrotic Syndrome, a Case Report</td>
<td>Saghafi H</td>
</tr>
<tr>
<td>Correlation of Metabolic Acidosis With Serum Albumin Levels and Protein Catabolic Rate (nPCR) in Hemodialysis Patients</td>
<td>Zeraati A</td>
</tr>
<tr>
<td>Evaluation of Correlation Between Level of Serum Zinc With Serum Lipid Levels in Hemodialysis Patients</td>
<td>Zeraati A</td>
</tr>
<tr>
<td>Severe High Anion Gap Metabolic Acidosis in Pregnancy</td>
<td>Hami M</td>
</tr>
<tr>
<td>Abstracts List</td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td></td>
</tr>
<tr>
<td>P218</td>
<td>Hami M</td>
</tr>
<tr>
<td>P219</td>
<td>Motamed Najjar M</td>
</tr>
<tr>
<td>P220</td>
<td>Basiratnia M</td>
</tr>
<tr>
<td>P221</td>
<td>Sharifipour F</td>
</tr>
<tr>
<td>P222</td>
<td>Sharifipour F</td>
</tr>
<tr>
<td>P223</td>
<td>Derakhshan A</td>
</tr>
<tr>
<td>P224</td>
<td>Asgari M</td>
</tr>
<tr>
<td>P225</td>
<td>Savaj S</td>
</tr>
</tbody>
</table>

**Third Day, Thursday, November 24**

**Oral Presentations**

**08:00 – 09:00 38–40**

| O501 | Hooman N | Iranian Children on Continuous Ambulatory Peritoneal Dialysis, Second Report of Iranian National Registry |
| O502 | Hoseini SM/ Shojaei A | Using Time Boxing Method for Evaluation of Patient and Technique Survival in PD Patients, Based on Iranian CAPD Registry |
| O503 | Sanadgol H | Effect of Referral Time of CAPD Patients to Nephrologist on Survival |
| O504 | Nouri-Majelan N | Effect of PTH and Calcium-Phosphate Product on Peritoneal Membrane Function |
| O505 | Atabak S | The Latest Descriptive Report From Iranian CAPD Registry |

**14:30 – 15:20 40–43**

| O601 | Rashid-Farokhi F | Pleural Effusion in Hemodialysis Patients with Chronic Kidney Disease |
| O602 | Tayebi Khorseshahi H | The Effect of Nicotinamide in the Treatment of Hyperphosphatemia in Dialysis Patients |
| O603 | Amiri M | Descriptive Analysis of Iranian Hemodialysis Registry |
| O604 | Hemayati R | Adequacy of Dialysis and Nutritional Status in Hemodialysis Patients |

**Poster Presentations**

**44–56**

<p>| P301 | Beladi-Mousavi SS | Epidemiology of Hepatitis C Virus Infection in ESRD Patients in Khuzestan Province, Iran |
| P302 | Beladi-Mousavi SS | Don’t Forget the Evaluation of Dialysis Adequacy in Your Hemodialysis Centers |
| P303 | Rahbar M | Fluconazol in the Treatment of Cutaneous Leishmaniasis in a Kidney Transplant Patient, a Case Report |
| P304 | Safaei-asl A | Prevalence of Idiopathic Hypercalciumia Among Primary School Children in Rasht, Iran |
| P305 | Makhloogh A | Effect of Spironolactone-Placebo and Spironolacton-Losartan on Microalbuminuria in Type II Diabetes Patients |
| P306 | Makhloogh A | The Effect of Intradialytic Aerobic Exercise on Serum Electrolytes Levels in Hemodialysis Patients |
| P307 | Khatami MR | Correlation Between Serum Magnesium and Cardiovascular Disease in Hemodialysis Patients |
| P308 | Mohamm M | Percentage of Students Classified as Hypertensive or at Risk for Hypertension in School-Aged Children by Gender, Weight and Height in Tehran |
| P309 | Mohamm M | Kidney Ultrasonography and DMSA Scan for Revealing Vesicoureteral Reflux in Children With Pyelonephritis, a 7-Year Prospective Cohort Study of 1500 Pyelonephritic Patients and 2986 Renal Units |
| P310 | Sorkhi H | Prediction of Vesicoureteral Reflux in Children with First Urinary Tract Infection by DMSA and Ultrasonography |
| P311 | Ahmadzadeh A | Congenital Imperforate Hymen Causing Renal Failure, Case Report |</p>
<table>
<thead>
<tr>
<th>Abstract ID</th>
<th>Author(s)</th>
<th>Title of Abstract</th>
</tr>
</thead>
<tbody>
<tr>
<td>P312</td>
<td>Hadian B</td>
<td>Survey on Blood Lead, Copper, and Plasma Aluminum Concentrations in Dialysis Patients, a Multicentric Study</td>
</tr>
<tr>
<td>P313</td>
<td>Milladipour AH</td>
<td>Renal Function Among Adult With Recurrent Calcium Kidney Stone Disease</td>
</tr>
<tr>
<td>P314</td>
<td>Milladipour AH</td>
<td>Sodium Intake and Correlation of Urine Sodium in Spot Urine and 24-Hour Urine</td>
</tr>
<tr>
<td>P315</td>
<td>Naseri M</td>
<td>Urinary Incontinence in Children and Lower Urinary Tract Anomalies, Comparing Patients Younger and Older Than 5 Years</td>
</tr>
<tr>
<td>P316</td>
<td>Naseri M</td>
<td>Response to Low Dose Oxybutynin in Childhood Enuresis</td>
</tr>
<tr>
<td>P317</td>
<td>Ezzatzadegan-Jahromi S</td>
<td>Invasive Fungal Infection After Renal Transplantation</td>
</tr>
<tr>
<td>P318</td>
<td>Ezzatzadegan-Jahromi S</td>
<td>Peritonitis in Continuous Ambulatory Peritoneal Dialysis Patients in Shiraz, Iran</td>
</tr>
<tr>
<td>P319</td>
<td>Hasanzamani B</td>
<td>Prevalence of Hypertension in Hemodialysis Versus Peritoneal Patients</td>
</tr>
<tr>
<td>P320</td>
<td>Seyrafian S</td>
<td>Demographic Characteristics of Peritoneal Dialysis Patients in Isfahan</td>
</tr>
<tr>
<td>P321</td>
<td>Seyrafian S</td>
<td>Does Intraperitoneal Heparin Affect the Level of CA125 in Peritoneal Dialysis Effluent of Peritoneal Dialysis Patients?</td>
</tr>
<tr>
<td>P322</td>
<td>Amini M</td>
<td>Still's Disease and Nephrotic Range Proteinuria</td>
</tr>
<tr>
<td>P323</td>
<td>Azmandian J</td>
<td>The Effectiveness of Low Dose Daclizumab Compared With Standard Regimen for Acute Rejection Prevention After Renal Transplantation in Kerman, Iran</td>
</tr>
<tr>
<td>P324</td>
<td>Parin Hedayati Z</td>
<td>Severe Febrile Illness With Acute Kidney Injury After Swimming in River</td>
</tr>
<tr>
<td>P325</td>
<td>Samavat S</td>
<td>Correlation between Inflammatory Cell Infiltration and Histopathologic and Clinical Manifestations of Lupus Nephritis</td>
</tr>
<tr>
<td>P326</td>
<td>Shahgholian N</td>
<td>The Effect of Aromatherapy on Pruritus in Patients Undergoing Hemodialysis</td>
</tr>
<tr>
<td>P327</td>
<td>Shahgholian N</td>
<td>The Effect of Sodium and Ultra Filtration Profile Combination and Cold Dialysate on Hypotension During Hemodialysis and Its Symptoms</td>
</tr>
<tr>
<td>P328</td>
<td>Pezeshki A</td>
<td>Frequency of BK Virus Nephropathy Among Renal Transplant Recipients</td>
</tr>
<tr>
<td>P329</td>
<td>Rostamzadeh Z</td>
<td>Seroprevalence of Hepatitis E Among Iranian Renal Transplant Recipients</td>
</tr>
<tr>
<td>P330</td>
<td>Saddadi F</td>
<td>Comparison of the Effects of Sirolimus and Cyclosporine on Left Ventricular Hypertrophy in Kidney Transplant Recipients, A 1-Year Single Center Prospective Cohort Study in Dr. Shariati Hospital, Tehran, Iran</td>
</tr>
<tr>
<td>P331</td>
<td>Mortazavi M</td>
<td>The Effect of Pentoxyphiline for Reduce of Erythropoietin Needs in Hemodialysis Patients</td>
</tr>
<tr>
<td>P332</td>
<td>Mortazavi M</td>
<td>The Effect of Aerobic Exercise on the Symptoms of Restless Leg Syndrome and Quality of Life in Hemodialysis Patients</td>
</tr>
<tr>
<td>P333</td>
<td>Mortazavi M</td>
<td>Is There Any Difference Between Use of Gentamycin and Mupirocin Ointments in Decrease Exit Site Infection Ratio in Peritoneal Dialysis Patients?</td>
</tr>
<tr>
<td>P334</td>
<td>Naseri M</td>
<td>Mono-Symptomatic and Non–Mono Symptomatic Nocturnal Enuresis, A Clinical Evaluation</td>
</tr>
<tr>
<td>P335</td>
<td>Naseri M</td>
<td>Role of High Dose Hydrochlorothiazide in Hypercalciuric Urolithiasis of Childhood</td>
</tr>
</tbody>
</table>

**Forth Day, Friday, November 25**

**Oral Presentations**

<table>
<thead>
<tr>
<th>Time</th>
<th>Title of Presentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:00 – 09:00</td>
<td>Chronic Peritoneal Dialysis for End-Stage Renal Disease, a Single Center Experience in Shiraz, Iran</td>
</tr>
<tr>
<td>09:00 – 10:00</td>
<td>Chronic Peritoneal Dialysis for End-Stage Renal Disease, a Single Center Experience in Shiraz, Iran</td>
</tr>
<tr>
<td>10:00 – 11:00</td>
<td>Chronic Peritoneal Dialysis for End-Stage Renal Disease, a Single Center Experience in Shiraz, Iran</td>
</tr>
</tbody>
</table>

**Poster Presentations**

<table>
<thead>
<tr>
<th>Time</th>
<th>Title of Presentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:00 – 12:00</td>
<td>The Effect of Aromatherapy on Pruritus in Patients Undergoing Hemodialysis</td>
</tr>
<tr>
<td>12:00 – 13:00</td>
<td>The Effect of Aromatherapy on Pruritus in Patients Undergoing Hemodialysis</td>
</tr>
<tr>
<td>13:00 – 14:00</td>
<td>The Effect of Aromatherapy on Pruritus in Patients Undergoing Hemodialysis</td>
</tr>
</tbody>
</table>

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**Iranian Journal of Kidney Diseases | Volume 5 | Supplement 2 | November 2011**
| P411 | Ezzatzadegan-Jahromi S | Withdrawal From Peritoneal Dialysis and Switching to Hemodialysis in Chronic Peritoneal Dialysis Patients |
| P412 | Ezzatzadegan-Jahromi S | Comparing The Effect of Unfractionated Heparin with Low Molecular Weight Heparin on Serum Potassium Level in Hemodialysis Patients |
| P413 | Seyrafian S | Outcome and Clinical Findings of Peritoneal Dialysis Patients in Isfahan, Iran |
| P414 | Seyrafian S | Laboratory Evaluation of Peritoneal Dialysis Patients in Isfahan, Iran |
| P415 | Nazemian F | Evaluation of Serum Zinc Concentration in Dialysis Patients Compared with Normal Control |
| P416 | Nazemian F | Effect of Renal Transplantation on Biomarkers of Inflammation in End-Stage Renal Disease Patients |
| P417 | Soltani HR | Echocardiographic Evaluation of Left Ventricle in Patients With Mild Hypertension in Comparison With Control Group, a Historical Cohort Study |
| P418 | Rasoulzadegan MH | Relation Between Secondary Hyperparathyroidism and Left Ventricular Hypertrophy in Hemodialysis Patients |
| P419 | Hemayati R | Improvement of Renal Function and Massive Pericardial Effusion After Treatment of Severe Hypothyroidism |
First Day

Tuesday, November 22
O101

The Survey of Diastolic Function Changes in ESRD Patients Before, 3, and 6 Months After Kidney Transplantation in Razi Hospital, Rasht, Since 2008 to 2009

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Introduction. Left ventricular diastolic dysfunction is prevalent in end-stage renal disease and predicts morbidity and mortality in affected patients. The aim of this study was to evaluate the diastolic function changes in end stage renal disease patients before, 3 and 6 months after kidney transplantation.

Methods. In a longitudinal study from November 2008 to November 2009, all consecutive patients received kidney transplantation presenting to the transplantation ward of Razi hospital were enrolled in the study. Systolic and diastolic blood pressure and echocardiographic parameters such as ejection fraction, left ventricular mass, and diastolic function were measured before, three and six months after transplantation for all patients. Data were analyzed by repeated measure ANOVA and friedman test using SPSS version 18.

Results. Among 27 patients, mean age was 39.47 ± 12.27 years and 55.6% of cases were male. Mean of systolic blood pressure and diastolic blood pressure and left ventricular mass decreased significantly 3 months after transplantation (125.44 ± 11.35, 78.51 ± 6.32, 141.94 ± 3.32, respectively) and 6 months after transplantation (121.48 ± 10.63, 72.96 ± 4.21, 138.25 ± 3.12, respectively) compared to before transplantation (136.77 ± 14.09, 81.92 ± 9.01, 158.30 ± 3.58, respectively, \( P < .05 \)). Left ventricular ejection fraction increased significantly 3 months after transplantation (63.00 ± 6.49) and 6 months (66.11 ± 5.87) after transplantation compared to before transplantation (62.48 ± 5.74); \( P < .05 \). Step mean of diastolic function also decreased significantly 3 (1.94) and 6 (1.81) months after transplantation compared to before transplantation (2.24), \( P < .05 \).

Conclusions. According to our findings, transplantation can correct ejection fraction, systolic, and diastolic blood pressure that lead to left ventricular hypertrophy regression. Diastolic function would be improved after transplantation. It is recommended to perform further studies with larger sample size and control group for obtaining reliable results.

O102

Strong Association of Phenylalanine and Tryptophan Metabolites With Activated Cytomegalovirus Infection in Kidney Transplant Recipients

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Introduction. Infection-induced inflammation triggers catabolism of proteins and amino acids. Phenylalanine and tryptophan are 2 amino acids related to infections that regulate immune responses. Polyomavirus BK (BKV) and Cytomegalovirus (CMV) are important pathogens after kidney transplantation.

Methods. We investigated the clinical relevance of phenylalanine, tryptophan, and tryptophan metabolites (kynurenine, quinolinic acid) plasma levels in kidney transplant recipients with active CMV [CMV(+)/BKV(-), n=12] or BK virus infection [BKV(+)/CMV(-), n=37]. Recipients without active viral infections [CMV(-)/BKV(-), n=28) and CMV(-)/BKV(-) healthy individuals (HCs, n=50) served as controls.

Results. In contrast to BKV infection, activated CMV infection is tightly linked to increased phenylalanine and tryptophan metabolite plasma levels (\( P = .002 \)). The association of phenylalanine (cut off, 50 µmol/L) with CMV infection shows very high sensitivity (100%) and specificity (94%). On the other hand, kynurenine (\( P = .03 \)) and quinolinic acid (\( P = .003 \)) values reflect the severity of CMV infection.
**Conclusions.** Our findings indicate that activated CMV is strongly associated with increased phenylalanine as well as kynurenine and quinolinic acid plasma levels. Tryptophan metabolites are also an indicator of the disease’s severity.

**O103**

**Predictive Value of Neutrophil Gelatinase-Associated Lipocalin (NGAL) in Early Prognostic of Contrast-Induced Nephropathy After Angioplasty-Angiography**

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**Introduction.** While the early diagnosis of Acute Kidney Injury (AKI) is critical in management of the patients with this type of disease, few markers help diagnosis of AKI before raising the serum creatinine. Neutrophil Gelatinase-Associated Lipocalin (NGAL) is a biomarker that its value has been shown in some critical situations like patients undergoing coronary bypass surgery and in patients admitted in intensive care units. There are few study that shows it may be useful in early diagnosis of Contrast Induced Nephropathy (CIN). In this randomized open label study, we hypothesized that neutrophil NGAL is an early predictive biomarker of CIN.

**Methods.** In this process evaluation study, we enrolled 122 patients who were undergoing elective angiography-angioplasty with contrast administration. Serial urine samples at times 0, 12, and 24 hours post procedure were analyzed in a double blind fashion by NGAL Enzyme-Linked Immunosorbent Assay (ELISA). All patients followed for five days and serum creatinine measured at second and fifth day after contrast administration. CIN is defined as a 25% increase in serum creatinine from baseline.

**Results.** In this study, CIN was found in 37 subjects (30.3%). Significant elevation of NGAL concentrations in urine (90.62 ± 105.63 versus 27.6 ± 45.8 ng/mL without CIN, \( P = .0001 \)), (79.78 ± 117.7 versus 30.92 ± 52.84 ng/mL without CIN, \( P = .002 \)) were noted within 12 and 24 hours after the procedure, respectively. Serum creatinine rose significantly at fifth day after procedure (\( P = .0001 \)). We found, using a cut-off value of 8 ng/mL, sensitivity, specificity, negative predictive value and area under the Receiver-Operating Characteristic (ROC) curve for prediction of CIN were good for the 12-hour urine NGAL (94%, 25%, 91%, and 0.75, respectively) and 24-hour urine NGAL (97%, 24%, 95%, and 0.70) with cut-off value of 5.5 ng/mL.

**Conclusions.** Urine NGAL may represent a sensitive early biomarker of acute renal failure after angiography-angioplasty.

**O104**

**Effects of Kidney Transplantation on Early and Late Post Transplant Prostate Specific Antigen and Testosterone Levels**

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**Introduction.** This study was performed to evaluate the effect of kidney transplantation on serum Prostate Specific Antigen (PSA) and testosterone levels and to determine whether or not serum testosterone levels have any influence on serum PSA in patients undergoing kidney transplantation.

**Methods.** Thirty patients who were on peritoneal or haemodialysis underwent renal transplantation at our department. The Immunosuppressive protocol was uniform during the study period. The PSA (free and total) and testosterone levels were measured immediately before renal transplantation and on post transplant days 1, 7, 90, and 180. Measurements of free PSA and total testosterone levels were measured using immunofluorometric assays. The paired t test was used to assess the statistical significance of differences in all analyses and relationships between variables were analyzed by Pearson correlation analysis.

**Results.** The mean age was 48 ± 8.35 years old. Out of the 30 renal transplant recipients, DGF was observed in 6 (20%) patients. There was a significant
decrease in serum free PSA and testosterone levels on post transplant days 1, 7, 90, and 180 (\(P < .05\))
and in total PSA on post transplant days 1 and 7. There were no significant changes of total PSA on post transplant days 90 and 180. There was a significant inverse correlation between testosterone and total PSA, 6th month after transplantation \((r = -0.635, \ P = .049)\), however there was no significant correlation between testosterone and total PSA on post transplant days 1 and 7, and between testosterone and free PSA in early and late post transplant period.

**Conclusions.** In agreement with previous evidence, our renal transplant recipients are characterized by a significant decrease in serum PSA levels in post transplant period compared with pre-transplant period. However, it is not in agreement with previous evidence indicating that a significant decrease in serum testosterone levels at various post transplant periods and a significant inverse correlation between testosterone and total PSA, in 6th month after transplantation exists. Moreover, high frequency of DGF (20%) in our study population may contribute to the differences in the reported findings. Hence, further studies are required to confirm our results.

**O105**

**Comparison Between the Effects of Calcitriol and Cholecalciferol on Bone Mineral Density of Renal transplant Patients**

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**Introduction.** According to cost difference between active form of vitamin D3 (Calcitriol) and vitamin D3 (Cholecalciferol), we decided to compare between the effects of treatment with vitamin D-calcium and calcitriol plus calcium carbonate on bone mineral density of kidney transplant patients. **Methods.** This study is randomized controlled clinical trial and was done between 2005 to 2010. Forty-eight kidney transplant patients who had inclusion criteria and did not have exclusion criteria entered the study. We randomly divided the patients into two treatment groups, vitamin D-calcium and calcitriol plus calcium carbonate. Bone mineral density (BMD) measurement was done just before transplantation and one year after that. In addition, we checked serum Parathyroid Hormone (PTH) and alkaline phosphatase every six months and 24 hours urine calcium and computation of GFR was done every 3 months. Descriptive and analytical (paired t-test, independent t-test, wilcoxon) analyses were done by SPSS version 15. **Results.** At the end of study, the number of patients was 24 in calcitriol group and 13 in vitamin D group. In vitamin D group, the increase of T score and Z score in lumbar spine was \(0.39 \pm 0.7\) and \(0.64 \pm 0.8\), respectively \((P = .03)\) and in hip bone was \(0.28 \pm 1.2\) and \(0.2 \pm 0.6\), respectively. In calcitriol group, T score and Z score in hip bone increased \((0.11 \pm 0.8\) and \(0.13 \pm 1.3\), respectively) and in lumbar spine decreased \((0.1 \pm 1\) and \(0.11 \pm 1\), respectively). In between group comparison, the difference between Z score increase in vitamin D group and decrease in calcitriol group was significant \((P = .03)\). **Conclusions.** Because of similar and even better effect of vitamin D in improving BMD and lower cost of treatment with this drug, we recommend the use of vitamin D in place of calcitriol in kidney transplant patients.

**O201**

**Clinico-Pathological Findings in Iranian Elderly Kidney Patients, a Case Series Study**

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**Introduction.** Most of renal abnormalities in elderly are considered because of aging but it seems recently there is an increase in renal biopsy among elderly patients. Data have shown some differences in pathology and clinical presentations in this group. We planned a study to investigate the cause of renal biopsy and clinico-pathologic presentations of elderly patients in our center.
Methods. Data from 2270 patients (56% male, mean age = 37.8 ± 16 years) 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. Of these, 182 patients were > 65 years old.

Results. Among 2268 patients with a definite pathologic diagnosis, the most frequent types of biopsy-proven renal diseases were MG (576 patients, 25.3%), FSGS (267 patients, 11.7%), IgAN (252 patients, 11.1%), lupus nephritis (225 patients, 9.9%), and minimal change disease (186 patients, 8.2%). In group under 65 years of age, there was the same distribution of renal biopsy findings; however, in the elderly group after MG and FSGS, amyloidosis, IgAN, diffuse crescentic GN, diabetic nephropathy, and multiple myeloma were the most frequent diagnoses. There were higher prevalence of male patients (P < .004), hypertension (P < .001), and azotemia defined as serum creatinine > 1.4 mg/dL (P < .001) in the elderly group. Nephrotic syndrome was the most common renal syndrome in this group, as in the patients under 65 years of age. Secondary glomerular disease was seen in 26.9% of elderly with a lower risk of lupus nephritis and higher risk of amyloidosis, multiple myeloma, light chain deposition disease, and hypertensive nephrosclerosis compared to patients less than 65 years of age. In patients presented with nephrotic syndrome, MG was the most common renal disease in this group, as in the patients under 65 years of age. Secondary glomerular disease was seen in 26.9% of elderly with a lower risk of lupus nephritis and higher risk of amyloidosis, multiple myeloma, light chain deposition disease, and hypertensive nephrosclerosis compared to patients less than 65 years of age. In patients presented with nephrotic syndrome, MG was the most common diagnosis found followed by amyloidosis, FSGS, and membranoproliferative glomerulonephritis (MPGN).

Conclusions. Our study showed higher rate of renal biopsy done for older men (65.9%) and nephrotic syndrome was the most common reason for performing renal biopsy in elderly patients (57.6%) that was similar to the patients less than 65 years old (57.4%). MG was the most frequent pathology in the elderly followed by FSGS and amyloidosis. Other studies have shown vasculitis, crescentic GN, and pauci-immune GN as the most common pathology findings in the elderly. In our study, 8% of all renal biopsy cases are from elderly that is less than similar studies. This could be due to limitations on performing renal biopsy in this group. Although our study and others showed, most of these diseases are treatable and biopsy indications of elderly patients need to be expanded in our center.

O202
Relation Between Serum Homocysteine Level and Amount of Albuminuria in Type-2 Diabetes Mellitus

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Introduction. Diabetic nephropathy is associated with increased risk of cardiovascular disease. Risk factor such as age, male sex, hyperglycemia, hypertension, and hyperlipidemia cause progression of diabetic nephropathy. Homocysteine is an amino acid that plays role in production of cysteine and methionine. Vitamin B12 and folic acid have essential role in homocysteine metabolism. Hyperhomocysteinemia leads to increase cardiovascular diseases, and atherosclerotic and thrombotic accidents. Studies on animal models have shown that elevations of homocysteine lead to increased albumin excretion via injury to podocyte and conversion of associated proteins, and some case reports on human population have shown direct and significant relation between homocysteine and albuminuria.

Methods. In this cross-sectional study, 56 patients with type-2 diabetes were selected through easy protocol and were divided into two groups of normal (normoalbuminuria) and albuminuria. Exclusion criteria include history of thyroid disease, using of drugs affecting homocysteine level during 3 months prior to study, and Cr > 1.1 mg/dL. After physical examination, age, sex, weight, history of hypertension, and thyroid condition were documented in questionnaire. Blood sample for FBS, 2hpp, HbA1C, homocysteine, and Cr was taken. Data were analysed by nonparametric test (mann whitney).

Results. The mean homocysteine in albuminuria group was higher than normoalbuminuria, but difference was not significant (P > .05). Differences were statistically significant and inverse between albuminuria and FBS and HbA1c (P = .01 and .22, respectively). Twelve patients had hyperhomocystenemia (Hcy > 15 mmol/L) and 44 patient had normohomocystenemia (Hcy < 15 mmol/L). Patients with hyperhomocystenemia had older age (P = .009, r = 0.3600), higher Cr (P = .008,
r = 0.3620) and lower HbA1C (P = .021, r = 0.347).

Conclusions. In this study, there was not significant difference between homocysteine and albuminuria and need to conduct larger prospective study.

O203

Anti-Apoptotic Effect of Atorvastatin in Experimental Nephropathy Induced by Isoproterenol in Rats

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Introduction. Nephropathy remains one of the leading causes of death in all industrialized nations. This study was conducted to investigate Atorvastatin effects on renal cells apoptosis following Isoproterenol-induced nephropathy.

Methods. Fifty male Wistar rats were randomly assigned into 5 groups of 10 animals each, including: 1- healthy control, 2- diseased (nephropathy) control, 3- treated with low dose of Atorvastatin, 4- treated with average dose of Atorvastatin, and 5- treated with high dose of Atorvastatin. For creation of nephropathy, Isoproterenol was injected subcutaneously at a dose of 0.5 mg/kg/d for 10 days. Groups 1 and 2 received only normal saline (10 mL/kg). Groups 3 to 5 received Atorvastatin at 5, 10, and 15 mg/kg. All treatments were administered orally dissolving in 10 mL/kg normal saline daily that started 3 weeks before Isoproterenol injection and continued until the end of experiment. After the last treatment, the rats were euthanized and histological sections from renal tissue were prepared through TUNEL staining method. Apoptotic cells were counted with under light microscope. The data obtained were statistically analyzed using ANOVA. Differences were considered statistically significant at P < .05.

Results. Isoproterenol caused significant increase in the number of apoptotic cells in group 2 versus healthy control (P < .001). In groups 3, 4, and 5, Atorvastatin (5, 10, and 15 mg/kg) caused significant decrease in the number of apoptotic cells in comparison with group 2.

Conclusions. Results indicated that Atorvastatin inhibits apoptotic cell death of renal cells induced by Isoproterenol in dose dependent manner in rats.

O204

Human Genomic Alterations Impacting the Prognosis of Renal Cell Carcinoma

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Introduction. Renal cell carcinoma (RCC) accounts for approximately 86% of all renal cancers in human adults. RCC is the tenth leading cause of cancer in USA. These tumors arise from tubular epithelial cells. Different risk factors (smoking, obesity, hypertension, unopposed estrogen treatment, asbestos, and benzene) contribute to the formation of RCC tumors. Its clinical presentations include palpable mass, back pain, fever, and hematuria. Three major classifications of RCC include: 1) non-papillary carcinoma (80%); 2) papillary carcinoma (15%), and 3) chromophobe renal carcinoma (5%). About 95% and 5% of RCC are sporadic and familial, respectively. Here, we have analyzed the genomic over-expression of two tumor suppressor genes (p53, bcl-2) in RCC tumors.

Methods. A cohort study of 49 RCC patients were performed in Tehran university of Medical sciences between 2000 and 2009. The average age of the patients was 45 years old. In addition, 34 patients were male and 15 were females. We examined the following variables: age, gender, tumor grade, and the expression of two tumor suppressor genes (p53, bcl-2). These data were analyzed by SPSS software, spearman, chi-square and ANOVA statistical testing.

Results. The molecular analysis of p53 and bcl-2 were positive in 12 (25.5%) and 15 (31.9%) patients with RCC, respectively. The mean expression of p53 and bcl-2 in RCC tumors were 20 and 40 times higher than normal tissues, respectively. In spite of uncovered genetic alterations in some RCC tumors, no consistent correlation was observed between the grading status of different tumors and tumor suppressor genomic over-expression.

Conclusions. Our data showed that genomic alterations of p53 and bcl-2 tumor suppressor genes in RCC led to different prognostic manifestations in different population.
**P101**

**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 follow 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.

**P102**

**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. Chemoherapeutic 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 theophyline group (group 2, 26 males and 12 females). The mean age and mean dose of Cisplatine 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 Cisplatine nephrotoxicity and different age (P = .1), males and females (p=0.64) and mean dose of Cisplatine (P = .8).

**Conclusions.** These results indicate that prophylactic
application of Aminophylline and Theophylline has not a protective effect against Cisplatin nephrotoxicity.

**P103**

**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.

**P105**

**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 \((SNAPSural, P = .04; SNAPMedian, P = .01; CAMPPeroneal, P = .03; and CAMPULnar, P = .02)\) but they worsened in the control group \((SNAPSural, P < .001; SNAPMedian, P < .01; CAMPPeroneal, P < .01; and CAMPULnar, P < .01)\). 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.

P107

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 \((92.3\% \text{ and } 93.2\%)\), in patients with high flux membrane \((95\% \text{ and } 94.4\%)\), and between patients with high and low 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 corgraft 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%), hypernatriuria (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. Redistribution 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 content was evaluated by a dietician. Paired sample t test was used to compare the pre- and post-transplant values.

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.

P113

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), in 10.3%, Renagel in 53.8%, EPO in 84.6%, and Venofer in 74.7% of cases. SMAQ 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).

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
First Day

13th International Congress of Nephrology, Dialysis and Transplantation—Poster Presentations

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 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.
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.

**P117**

Primary Aldostronism on Essential Hypertension, a Case Report

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**Introduction.** Primary hyperaldostronism 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 PCO$_2$ = 41.5 mmHg, venous HCO$_3$ = 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 aldostronism, 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 aldostrone (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 hyperaldostronism 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 hyperaldostronism was confirmed.

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

**P118**

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.

**P119**

**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 nephropaty.

**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.
Second Day

Wednesday, November 23
Nephrologists all over the world perform therapeutic plasmapheresis. Plasma exchange is available in all major cities and medical centers. Therapeutic apheresis such as plasma exchange, membrane plasmapheresis, double filtration, chemoadsorption, and immunoadsorption are used to treat a wide range of diseases. Cytopheresis such as thrombocytopenia is used to treat symptomatic thrombocytosis. Other cytopheresis are lymphocytopenia to treat leukemia, peripheral stem cell collection of CD34 for bone marrow transplant, granulocyte/macrophage collection to treat inflammatory bowel disease. Erythrocytopheresis is used to treat sickle cell crisis and photopheresis to treat transplant rejection. There are six methods of cholesterol removal in the case of familial Type II-A hypercholesterolemia and patients with coronary heart disease not responding to cholesterol lowering medications. These are as follows: plasma exchange, double filtration, chemoadsorption, HELP system (heparin mediated extracorporeal low-density lipoprotein), immunoadsorption using anti-LDL antibodies, and direct apheresis of lipoprotein from whole blood called DALI. Beta microglobuline that accumulates in dialysis patients can be removed by immunoadsorption column called Lixelle. Therapeutic apheresis remains the first choice in diseases requiring emergency plasmapheresis such as anti-GBM disease, TTP, myasthenia gravis crisis, hyperviscosity syndrome, and transplant rejection. Double filtration using filter with different pore sizes are used to remove large molecules with different sizes such as LDL and IgM, IgG, and IgA antibodies. Cryofiltration is a procedure to precipitate cryoglobulines or cryofibrinogen in cold and removed by cryofilter. Tandem cryofiltration and HD can be used to treat cryoglobulinemic renal failure. We have performed more than 1300 cryofiltrations on 49 patients and more than 430 double filtrations to remove IgG and IgM antibodies in 22 patients. Two hundred and fifty LDL pheresis using double filtration and liposorba system on patients with familial hypercholesterolemia type II-A. We have done peripheral stem cell CD34 collections in last 15 years and photopheresis for 27 years. Therapeutic apheresis is proven safe and effective if used as indicated.

Clinical Presentation and Plasma Cytokine Levels of Hantavirus Infected Patients in Southwest Germany

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Introduction. Hantaviruses of the family Bunyaviridae are emerging zoonotic pathogens which cause hemorrhagic fever with renal syndrome (HFRS) in the old world and Hantavirus Pulmonary Syndrome (HPS) in the new world. An immune-mediated pathogenesis is discussed for both syndromes. The aim of study was comparing clinical and immunological characteristics in a cohort of patients hospitalized with severe acute hantavirus infection with healthy control subjects.

Methods. We retrospectively studied 64 patients hospitalized with acute Pulmonary hantavirus infection, detected by positive anti-hantavirus IgG and IgM, during a hantavirus epidemic in Germany in 2010. Detailed clinical parameters and plasma cytokines were analyzed during the acute phase of disease and in the convalescence period.

Results. Typical clinical presentation included initial febrile illness with mainly fever, lumbalgia, headache, vision disturbance, and gastrointestinal symptoms followed by subsequent renal failure comparable to the clinical spectrum reported in recent epidemics; however, several unusual clinical presentations were observed. Cytokine analysis revealed significantly higher plasma levels of IL-2, IL-6, IL-8, TGF-81, and TNF-alpha in hantavirus-infected patients during acute and convalescence phases compared to uninfected controls. From acute to convalescence phase, TGF-81 plasma levels increased whereas plasma IL-6, IL-10, and
TNF-alpha significantly decreased.

Conclusions. Activation of T-lymphocytes and monocytes/macrophages supports the hypothesis of a mainly immune-mediated pathogenesis during hantavirus infection. In the convalescence phase, immunosuppressive TGF-ß1 level increase, suggesting the induction of a protective immune mechanism that down-regulates the immune response.

O303
Bladder Dysfunction in Children With Nocturnal Enuresis
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Introduction. Nocturnal enuresis is a common health problem during childhood period. Different etiological factors have been suggested in the pathogenesis. New studies reveal association between enuresis and voiding disorders (bladder dysfunction). This study was conducted to define frequency of urodynamic abnormalities in enuretic children and to determine parameters that might predict bladder dysfunction.

Methods. Sixty neurologically normal children who referred nephrology clinic during a 2-year period enrolled study. Urinalysis, U/C, kidney-bladder US, and uroflowmetry were done for all. Full Urodynamic Study (UDS) including pelvic floor EMG and CMG were done in case of abnormal uroflowmetry, abnormal bladder US, daytime incontinence, and age > 10 years in patients with MNE. Finally, 48 patients underwent UDS.

Results. In 11 cases, results were unreliable. The results were normal in 10 (20.8%) and 27 (56.2%) had abnormal UDS. In 37 patients, the results of UDS were reliable which included Over Active Bladder (OAB) in 23 (62.2%) patients, detrusor over activity in 17 (46%), OAB + detrusor over activity in 15 (40.6%), and under active bladder in 2 (5.4%). There was not any significant differences between age, gender, family history of enuresis, presence of daytime incontinence, and bowel symptoms (constipation or encopresis) regarding to US findings in patients with abnormal and those who had normal UDS.

Conclusions. We found that abnormal UDS is common in enuresis. Overactive bladder is the most common finding and clinical and US parameters can predict enuretics who need urodynamic evaluation.

O304
CRIB, CRIB II, SNAP, SNAP II and SNAP-PE Scoring Systems and RIFLE Criteria in Critically Ill Neonates With Acute Renal Failure
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Introduction. More than 30 Acute Kidney Injury (AKI) definitions exist in the published literature and there is no consensus especially in neonatal group. Chevalier and colleagues defined neonatal acute renal failure as serum creatinine values > 1.5 mg/dL for at least 24 hours. Acute Renal Failure (ARF) affects approximately 1% to 24% of newborns in the Neonatal Intensive Care Units (NICUs). ARF is a significant factor of morbidity and mortality in critically ill children. The Acute Dialysis Quality Initiative (ADQI) group has recently proposed the RIFLE criteria for AKI in adults. The RIFLE acronym stands for risk, injury, failure, loss of kidney function and end-stage renal disease. This classification system to define AKI in neonatal group has not been performed. We hypothesized that critically ill neonates with ARF based on old definition (serum creatinine more than 1.5 mg/dL) have decreased survival, independent of demographic characteristics, co-morbidities, clinical parameters, severity of illness and interventions variables known to predict infant survival. According to this hypothesis, we evaluated urine output, serum creatinine, and glomerular filtration rate in critically ill neonates and compared them to RIFLE scoring system.

Methods. This cohort study was conducted at the neonatal intensive care units of Mofid and Mahdieh hospitals which are two of the largest referral neonatal hospitals in Tehran. There are about 4400 deliveries annually in the Mahdieh hospital and about 2000 admissions to theboth neonatal intensive care units each year. Between March 2006 and May 2009 all neonates transferred to these NICUs were enrolled for the study in a prospective manner. We determined GFR, urine output, mortality, morbidity, and the RIFLE score
for each neonate. We also evaluated CRIB, CRIB II, SNAP, SNAP II and SNAP-PE score for each neonate and the final scores were then obtained by the arithmetic sum of individual scores of these parameters. The predictive accuracy of these receivers were expressed as area under the receiver operative characteristic (ROC) curve for each score and help to compare the performance of different tests, by plotting sensitivity, specificity, PPV and NPV. All groups were statistically analyzed by the t-test and logistic model was used to analyze the prediction of mortality. The ethics committee of the Shahid Beheshti medical university and pediatric infectious research center approved this study.

Results. We evaluated 404 neonates of NICUs of Mofid and Mahdieh hospitals during 2007 to 2009. Based upon RIFLE scoring system, 22.5% (91 neonates) of our study group had normal renal function and 77.5% (313 neonates) of them had abnormal renal function at the second day of admission. Therefore 313 neonates (77.5%) developed AKI by RIFLE criteria and among them 43% (135 neonates) met the risk, 51% (161 neonates) the injury and about 6% (17 neonates) the failure criterion. Based on old definition of ARF in neonates the rate of ARF in our study group was 3.2% (13 out of 404 neonates had serum creatinine more than 1.5 mg/dL), \( P < .001 \). In this study, we detected an overall in-hospital mortality of 20.5% in critically ill neonates. Of those who died, 81.9% (68 of 83 patients) had AKI. In patients with normal renal function, the rate of mortality was 16.5% and in patients with AKI based on RIFLE scoring system the mortality rate was 21.7% (\( P < .31 \)). In R (risk) group the mortality rate was 16.3%, in I (injury) group the mortality rate was 24.2% and in F (failure) group the mortality rate was 41.2%. In patients with ARF based on creatinine level definition (serum creatinine more than 1.5 mg/dL) the mortality rate was 61.5% (\( P < .001, \text{OR}=6.741 \)). A progressive and significant elevation in mortality was correlated with increasing RIFLE classification severity among all patients. (OR = 1.406, \( P = .042; \text{CI} = 0.76 \) to 2.06). The patients who had any degree of AKI at the time of admission to the NICU as well as those who had normal renal function had statistically significant higher median CRIB, CRIB II, SNAP, SNAP II and SNAP-PE NICU scoring systems, lower levels of apgar score, serum PH, serum bicarbonate and platelet count and were younger and smaller. Injury group on admission was associated with higher mortality than Risk group on admission (\( P < .001 \)) and patients who developed Failure criteria during NICU stay had higher mortality than those who developed Risk group criteria (OR = 3.17) or Injury group (OR = 1.84).

Conclusions. We concluded that a RIFLE criterion is a practical method to define AKI in neonatal group and it will be a good predictive tool for morbidity and mortality in NICUs.

O401
Long-term Outcome of Renal Transplantation in Patients With Familial Mediterranean Fever Amyloidosis, a Single Center Experience

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Introduction. Familial mediterranean fever (FMF) is an autosomal recessive disorder characterized by recurrent attacks of fever associated with serositis affecting the pleura, peritoneum, and/or large joints as well as systemic amyloidosis of AA type causing nephropathy and end-stage renal failure (ESRD). Renal transplantation (RTX) remains to be a choice of treatment for ESRD. The aim of this study was to investigate long-term results of RTX in patients with FMF amyloidosis.

Methods. We compared results of RTX in 21 patients with FMF amyloidosis among 542 (3.9%) transplants with 51 age and sex match non-FMF renal-transplanted patients as controls. In two groups, immunosuppression and duration of transplantation were similar. All FMF patients have MEFV mutation analysis and renal biopsy before RTX. Blood urea and creatinin, urine analysis, and Cyclosporine level were done monthly and 24 hours proteinuria every 3 months. All FMF patients were received Colchicine 1.5 to 2 g/d. Episodes of acute rejection were recorded. All patients were followed at least 5 years.

Results. In our study, one year’s graft and patient survivals were 95% and 100%, respectively. They were 85.71% and 95.23%, 5 years after renal
transplantation (in FMF group without significant differences versus controls group). The results of FMF gene analysis were M694V/M694V homozygote in 9, M694V/EQ148 in 2, M694V/V726A in 3, 680M-I/E148Q in 3, and M694V/M680I in four patients. Recurrence of amyloidosis was documented in two allograft recipients presenting with nephrotic range proteinuria (9.5%), one of whom lost the allograft due to recurrence. 5 years after RTX (one patient had M694V/M694V gene analysis while the other had M694V/M680I). One patient experienced late acute rejection 10 months after RTX. He became complicated with severe sepsis and he lost his kidney due to obligatory reductions in immunosuppression. Another patient lost his kidney due to chronic allograft nephropathy and developing post-transplant lymphoma. He died 56 months after RTX.

**Conclusions.** The long-term outcomes of transplantation in patients with amyloidosis secondary to FMF is similar to that in the general transplant population and maintenance Colchicine, even at low dose, appears to effectively prevent recurrence of amyloidosis in the allograft.

**O402**

**Comparison of Immediate Renal Dysfunction in Split and Partial Liver Transplantation Versus Full Size Liver Transplantation in Shiraz Transplant Center, Iran**

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**Introduction.** Renal dysfunction (RD) is a common complication in patients undergoing liver transplantation; it predisposes to further complications that are associated with an increase in morbidity and mortality in the immediate post-operation period. However, there is not any effective therapeutic strategy to prevent renal dysfunction. Various factors are outstanding in the pre-operation and post-operation period, as well as during surgery, which could predict the occurrence of renal dysfunction. These include the complexity of operation for liver transplantation, post-operation graft dysfunction, sepsis, and drug nephrotoxicity. Despite efforts to increase donor organ procurement, the demand for liver allografts has continued to exceed the number of organs available. This fact has resulted in an increase in the application of split and partial liver transplantation (SLT and PLT respectively). The aim of this study is to evaluate renal dysfunction in immediate post-operation period in patients that received split and partial liver transplantation and to compare the findings with corresponding data in patients who received full-size liver graft.

**Methods.** Changes in renal function during first 4 weeks after transplantation were analyzed retrospectively in 32 patients that received split and partial liver transplants SPLT group. The findings in this group were compared to corresponding data on 42 matched patients who received full-size liver transplants FSLT. All 72 patients were treated in our center from 1993 to 2006. Patients who had pre-transplanted renal dysfunction were excluded from the study. The severity of the liver disease was classified according to the Child-Turcotte-Pugh grading system (CPT), and the Model for End Stage Liver Disease score (MELD). The basic immunosuppression regimen included corticosteroid and mycophenolate mofetil with cyclosporine or tacrolimus. Serum creatinine (SCr), serum bilirubin, blood urea nitrogen (BUN) and international normalized ratio (INR) were measured before surgery, and, postoperatively, daily during the first week and at days 14, 21, and 28 Postoperative.

**Results.** Between 1993 till 2006, 32 patients received SLT and LRLT (SPLT group); 10 patients (31.2%) were from deceased donors and 22 patients (68.7%) were from living related donors. During this period 42 matched patients received full-size liver transplants FSLT. Acute rejection was diagnosed in 16 (51.6%) of SPLT group and in 9 (21.4%) of FSLT group which was significantly more frequent in SPLT group \( (P = .007) \). Among rejected patients 24% developed RD, postoperatively. The incidence of sepsis was significantly higher in SPLT group (23.3%) than FSLT group (4.8%, \( P = .024 \)) and 33% of these patients developed RD, postoperatively.

**Conclusions.** RD in the postoperative period after liver transplantation is common; it predisposes to further complications that are associated with a high mortality as well as development of chronic renal failure. The etiology of post liver
transplant renal failure is multifactorial including ischemic acute tubular necrosis, pre-renal state, use of potentially nephrotoxic drugs and sepsis-associated renal dysfunction. In our study despite higher incidence of RD in split and living related liver transplant (25.8% of patients) than full-size liver transplant (9.5% of patients), this difference is not statistically significant ($P = 0.063$). Higher incidence of rejection, reoperation, complication and a longer duration of surgery, anhepatic phase and mechanical ventilation in SLT patients may be related to difference in sepsis, renal function and requirement for renal replacement therapy found in this study.

O403

The Predisposing Factors of Acute Renal Failure in Scorpion Stung Children

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Introduction. Scorpion sting is one of the most important health problems in Iran and most subtropical countries. In Khuzestan province, according to scorpion types and long lasting hot season, the scorpion sting is a serious problem especially in children. Scorpion sting has local and systemic clinical manifestations. The most important systemic manifestation is Acute Renal Failure (ARF). This study was performed to investigate the predisposing factors of ARF in scorpion-stung patient.

Methods. This retrospective study performed on scorpion-stung patients admitted in Abuzar pediatric hospital, Ahvaz, from 2005 to 2010. The patients divided to two (ARF and non-ARF) groups and we statistically compared the risk factors of ARF in both groups.

Results. Out of 629 patients in study, 57.1% were male and mean age was 6.29 years. Summer was the most frequent season. Most of stung patients presented in the summer, hemiscorpius leptorus was the most frequent scorpion, and foot was the most common stung site. Young age, hyperthermia, hypertension, hemoglobinuria, proteinuria, pyuria, anemia, leukocytosis, thrombocytenia, and stung patients with hemiscorpius leptorus scorpion were significantly associated with ARF ($P < .001$, in all). In ARF group, the mean age was 4 years and frequency of anemia was 56%, thrombocytopenia 31%, pyuria 36.4%, hematuria 31.8%, proteinuria 71.1%, and hemoglobinuria 62.6%.

Conclusions. According to our findings, the toxic effects of hemoglobin, toxic acute interstitial nephritis, and hemolytic uremic syndrome were the patogenesis of ARF in our scorpion-stung patients.

O404

Efficacy of Vitamins C, E and Their Combination for Treatment of Restless Legs Syndrome in Hemodialysis Patients; a Randomized, Double-Blind, Placebo-Controlled Trial

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Introduction. Restless legs syndrome (RLS) is a common disorder in hemodialysis patients that leads to insomnia and impaired quality of life. Because high oxidative stress has been implicated in the pathogenesis of RLS, we sought to evaluate the efficacy of vitamins C and E and their combination in reducing the severity of RLS symptoms in hemodialysis patients in this randomized, double-blind, placebo-controlled, four-arm parallel trial.

Methods. Sixty patients on stable hemodialysis who had all four diagnostic criteria for RLS developed by International Restless Legs Syndrome Group with no acute illness or history of renal stone were randomly allocated to 4 equal groups. They receive vitamin C (200 mg) and vitamin E (400 mg), vitamin C (200 mg) and placebo, vitamin E (400 mg) and placebo, and double placebo daily for 8 weeks. The primary outcome was absolute change in international restless legs scale (IRLS) sum score from baseline to the end of treatment phase. IRLS scores and laboratory parameters such as serum levels of iron, ferritin, calcium, phosphorus, parathyroid hormone, and hemoglobin were measured for all patients at baseline and at the end of treatment phase.

Results. Means of IRLS sum score decreased significantly in vitamins C and E (10.33 ± 5.33;
95% CI, 7.38 to 13.28), vitamin C and placebo (10.00 ± 3.46; 95% CI, 8.08 to 11.92), and vitamin E and placebo groups (10.13 ± 5.99; 95% CI, 6.82 to 13.45) compared with the double placebo group (3.13 ± 2.97; 95% CI, 1.49 to 4.78). No differences were observed between these treatment groups. Changes in laboratory parameters had no effect on the observed reductions in the severity of RLS in 4 groups.

**Conclusions.** Vitamins C and E and their combination are safe and effective treatments for reducing the severity of RLS in hemodialysis patients in short-term.

**O405**

**Auditory Disorders in Children With End-Stage Renal Disease**

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**Introduction.** Abnormalities in auditory system are frequent in patients with End-Stage Renal Disease (ESRD). There is not any consensus for the effect of renal failure and hemodialysis on auditory complications. The aim of this study was to evaluate the auditory abnormalities in pediatric ESRD patients undergoing long-term hemodialysis and compare the results with those of nondialytic Chronic Renal Failure (CRF) children and controls.

**Methods.** Children aged 1 to 16 years were evaluated in three groups: 25 ESRD patients undergoing hemodialysis, 25 nondialytic patients with CRF, and 25 age- and sex-matched normal counterparts. Patients with history of otological disease, ear trauma, diabetes mellitus, receiving ototoxic drugs and syndromes with hearing abnormalities were excluded. The Auditory Brain stem Response (ABR) and Otoacoustic Emission (OAE) were tested in all subjects. Frequency of cases with abnormal findings was compared between the groups.

**Results.** Seventy two percent of patients were male. The mean age of patients was 9.9 ± 3.2 years. The mean duration of dialysis was 22.2 ± 12.2 months. The ABR testing in dialytic patients showed abnormal results in 11 (44%) patients as bilateral symmetric increased V latency by 35 decibels amplitude in frequencies between 1000 and 4000. The ABR testing was normal in nondialytic CRF children and controls ($P < .001$). The OAE testing was abnormal in all dialytic patients with abnormal ABR testing results (44%) in 1 (4%) nondialytic CRF children and in no controls ($P < .001$). There was no significant difference with regard to age, gender, height, weight, blood pressure, serum levels of blood urea nitrogen, creatinine, sodium and potassium, glomerular filtration rate, duration of dialysis, and dialysis adequacy between dialytic patients with and without abnormal results of ABR/OAE testing.

**Conclusions.** Sensorineural hearing loss is rare among nondialytic pediatric patients with CRF but very common in ESRD children undergoing long term hemodialysis.
P201

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 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.

P202

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.

P203

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

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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.

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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.
**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.

**P204**

**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.

**P205**

**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.

P206
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 bazzett’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.

P207
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.

P208
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 Rennin 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 + ß 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 + ß 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 that 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.

P209
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 Hydroxizin (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.

**P210**

**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 ± 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 < 60mL/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 IIB 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 and one amyloidosis. Renal involvement can adversely affect patient survival.

P213
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.

Parapharengeal 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 parapharengeal 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.
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 with serum levels of phosphorus, calcium, cholesterol, albumin, and PTH. We also found no correlation between predialysis 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.

P216

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, chlosterol, LDL, HDL, and TG were measured. Serum zinc was measured in fasting status by spectrophotometery.

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.

P217

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 (HCO3 7.9 meq/L, BE -14, PCO2 15.2 mmHg, PO2 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, PCO2 = 44 mmHg, HCO3 - = 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.

**P219**

**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 of 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.

**P220**

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 AIC 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.

P221

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.

P222

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.
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-relapser (26.2%), infrequent relapser (52.3%), and frequent relapser (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.

P225
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.
Third Day

Thursday, November 24
O501

Iranian Children on Continuous Ambulatory Peritoneal Dialysis, Second Report of Iranian National Registry

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Introduction. Our previous nationwide study in children on continuous ambulatory peritoneal dialysis showed some improvement in survival and reduction of morbidity. This is the second follow up study to evaluate the survival and comorbidity of children under treatment.

Methods. All children, younger than 16 years old, treated by continuous ambulatory peritoneal dialysis in six main pediatric nephrology wards in Iran between 1998 and 2009 were included in this historical cohort study. Patient and technique survival rates were determined. Kaplan-Mayer and cox-regression analysis were used to compare the survival. Cross table was used to calculate the risk ratio. A \( P < .05 \) was considered significant.

Results. From 2183 cases in the list of registry, 199 patients aged less than 16 years. The mean age was 6.64 ± 5.65 years. 62 (31.2%) had age less than 2 years, 34 (17%) aged between 2 to 5 years, and 103 (51.8%) aged more than 5 years. The etiology of renal failure were vesicoureteral reflux and recurrent urinary tract infection in 39 out of 157 cases (25%), glomerulonephritis and collagen vascular disease in 33 (21%), and undetermined in 29 (18.5%). The mean patient survival was 1.9 years. The mortality rate was 55% before 1997, and 60% between 1998 and 2001, which declined to 42.3% between 2002 and 2005, and 40.3% between 2005 to 2009 (\( P < .05 \)). The most frequently comorbidity were hypertension in 48 (24%) and congestive heart failure in 17 out of 121 (14%). Young age (< 24 months) was the only independent factor that predicted mortality (\( P < .05 \)). The outcome of children was as follows; recovery of renal function in 5 (2.5%), renal transplantation in 13 (15.6%), switch to hemodialysis in 26(13.7%), still on continuous ambulatory peritoneal dialysis in 90 (45.23%), and death in 47 (23.6%). From 26 patients who switched to hemodialysis, the causes were peritonitis in 16 (61.5%), catheter failure in 4 (15.4%), mechanical or hernia in 3 (11.5%), and the peritoneal failure, patient desire, and others including one (3.8%) each.

Conclusions. The survival of Iranian children on peritoneal dialysis has improved. Young age remained the most important factor influencing on survival and mortality.

O502

Using Time Boxing Method for Evaluation of Patient and Technique Survival in PD Patients, Based on Iranian CAPD Registry

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Introduction. In clinical research, there are lot of missing information that can either hinder the confidence and validity of statistical analysis or put it completely out of the box. In Iran, Peritoneal Dialysis (PD) Registry, the number and scattered pattern of unavoidable missing data were disabling for statistical analysis methods, especially in survival analysis. Following implementing variable time-box, the problem of missing observations could be overcome. In this study, we used this technique to assess the effect of overtime variations in laboratory parameters on patients and technique survival.

Methods. During 1st January 1995 to end of 2009 from 36 PD centers, monthly collected data (demographic, clinical, and laboratory) of 2261 patients who stayed on PD for more than three months was accumulated through a questionnaire containing 430 questions under 11 headings, entered in Hakim (a Farsi database), and analyzed using STATA (9.0). A Cox proportional hazards model with time dependent covariate was used to study the effect of different covariates on patient survival.
Results. Cox regression model using time-dependent covariate showed that WBC, phosphorous, albumin, diastolic blood pressure, and creatinine levels (all with the same $P < .0001$), urine volume ($P < .001$), PTH ($P < .002$), systolic blood pressure ($P < .02$), and LDL ($P < .03$) were significantly affecting patient survival. Regarding technique survival, Hb ($P < .0001$), and albumin ($P < .02$) were the only two parameters showed remarkable association.

Conclusions. Time-dependent survival analysis of the covariates could be an appropriate and practical analysis method, dealing with database with a high rate of missing information.

O503

Effect of Referral Time of CAPD Patients to Nephrologist on Survival

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Introduction. We studied 282 patients referred to two Iranian CAPD centers from 1st January 1995 to end of 2006. Data on demographic, clinical, and laboratory characteristics that were monthly collected through questionnaires were entered in Hakim (a Farsi database). The patient’s clinical and laboratory parameters included the determination of systolic and diastolic blood pressure, urine volume, serum calcium and phosphate levels, serum albumin, alkaline phosphates enzyme, cholesterol, triglyceride, hemoglobin, ferritin, PTH hormone, fasting blood sugar, weight, 24 hours urine, presence of edema, and npcr at first referrer to nephrologists. In addition, their changes after one year were analyzed. Then patients were categorized in two groups, timely referral (TR) and late referral (LR). TR group was defined as referred patients that visited by nephrologists more than 1 month before initiation of dialysis and serum creatinines were less than 6 mg/dL. LR group was patients that their first visit to nephrologists were less than one month before dialysis and their serum creatinines were more than 6 mg/dL. Patients survival (first, second, and five years) in two groups were determined also factors affecting survival were considered.

Methods. Data collected through an 18-sheet questionnaire on a monthly basis from 2 CAPD centres (Shafa and Shariati, Tehran, Iran) including demographic information, monthly lab findings, and clinical course. The data entered in Hakim software specifically designed for CAPD registry in Iran. The data used for this study were extracted from the Hakim database and analysed by STATA 9.0 software (StataCorp., College Station, TX, USA). Parametric values were expressed as mean ± SD. Chi-squared and Fisher’s exact tests were used for comparison of proportions. T student test was used to compare means. Cox regression analysis was used to assess patient survival rates. P-value less than .05 was assumed significant.

Results. There were 33 TR (48.5) and 35 LR (51.5%) patients. Age distribution, marital and educational status, and also distribution of BMI in TR and LR group were similar ($P > .05$) although there were more male in TR than LR (24 subjects, 72.7% versus 10 subjects, 28.6%; $P < .0001$). In addition, mean weight, presence of edema, mean of urine volume, FBS, and 24-hour UF were not significantly different in two groups ($P > .05$). At the baseline, there were not any significant difference in mean systolic and diastolic blood pressures, serum calcium and phosphate levels, albumin, alkaline phosphatase enzyme, cholesterol, triglyceride, hemoglobin, ferritin, PTH hormone, fasting blood sugar between two groups of TR and LR. However, the result of comparisons after one year proved that the level of ferritin was higher, but serum albumin level and npcr were lower in LR group. One, 2, and 5 years patient survival rates were 96%, 76%, and 76% in TR group patients and 87%, 78%, and 78% in LR group, respectively.

Conclusions. In conclusion, according to the definition of time of referral in present study, the main impact of late referral in CKD patients is the lack of control of inflammation. Increasing of ferritin and decreasing of albumin were shown. Then, poor nutrition may cause increase of mortality in the first year of dialysis onset. Changing of other clinical and laboratory parameters were dependent on the quality of them at the beginning of follow up. The measurement of the other inflammatory mediators such as CRP, ESR, and Fetuin can confirm these findings.
O504

Effect of PTH and Calcium-Phosphate Product on Peritoneal Membrane Function

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Introduction. Some factors such as peritonitis can cause decrease ultrafiltration and adequacy of peritoneal dialysis. Serum PTH and calcium-phosphor (Ca-P) product can result in extraosseous calcification such as calcification of peritoneal membrane. The aim of this study is to evaluate of effect of serum PTH and Ca-P product on membrane function in CAPD patients.

Methods. A multicenter, retrospective cohort study was carried out on 1284 patients receiving CAPD at least three months. According to first six months measurement of serum PTH and Ca-P product, patients were calcified into three groups (PTH < 150, PTH between 150 to 300, and PTH ≥ 300) and two groups (Ca-P product < 55, Ca-P product ≥ 55), respectively. According to classified PTH and Ca-P product, the baseline GFR, total Cr clearance, Kt/v and UF were compared with the last these variables.

Results. The mean age was 51 ± 16 (18 to 92 years). Patients had PTH < 150, 52%; PTH between 150 to 300, 33%; and PTH ≥ 300, 14%. Ca-P product < 55 and ≥ 55 were in 67% and 12% of patients, respectively. In the end of the study, patients with Ca-P product ≥ 55 had more frequency of total Cr clearance < 70 and Kt/v < 2.1 compared with patients with Ca-P product < 55 (57% versus 37%, P < .0001) and (65% versus 45%, P < .001). There was no difference between Ca-P product groups regarding GFR. There were no differences between PTH groups regarding last Kt/v, total Cr clearance, and GFR.

Conclusions. High serum Ca-P product can decrease Kt/v and total Cr clearance. However, serum PTH has no effects on PD adequacy and GFR.

O505

The Latest Descriptive Report From Iranian CAPD Registry

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O601

Pleural Effusion in Hemodialysis Patients With Chronic Kidney Disease

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Introduction. Although life expectancy of patients with terminal uremia has increased by improved technology of hemodialysis, living in uremic state is associated with a variety of complications. Pleural problems are among them. Uremic patients are susceptible to many causes of transudative and exudative pleural effusions such as cardiac failure, volume overload, infection, and malignancy. In addition, uremia per se can cause pleuritis. Uremic pleuritis has been introduced as a clinicopathologic entity since four decades ago. However, the information about pathogenesis, clinical course, and management of this complication is still inadequate. Existence of case reports of uremic patients with concurrent occurrence of pleuritis and pericarditis leads uremic toxins to be considered as the main culprit in pathogenesis of uremic pleuritis.

Methods. In this study, all patients with end-stage renal failure and pleural effusion who were admitted in the respiratory disease center of Masih Daneshvari hospital between June 2005 and May 2011 were evaluated for the etiology of pleural disease and associated clinical and paraclinical
findings. Statistical tests of chi², Fisher exact, ANOVA, post hoc tukey, and Kruskal Walis were used for comparing data of patients with most common etiologies of pleural effusions.

**Results.** Seventy-six patients, 52 males and 24 females, with a mean age of 53.48 ± 13.08 years were included. Pleural effusions were unilateral in 69.7% and exudative in 74.1% of patients. Parapneumonic effusion (23.7%), uremic pleuritis (23.7%), and cardiac failure (19.7%) were the most common causes of pleural effusion followed by volume overload (6.6%), tuberculosis (6.6%), and malignancy (5.3%). An unknown etiology was suggested for 7.7% of patients. There was no differences in the mean age, sex distribution, and duration of being on hemodialysis treatment in patients with uremic pleuritis, parapneumonic effusion, and cardiac failure. In 83.3% of patients with uremic pleuritis, pleural effusion was unilateral and in 40% of them pleural fluid was bloody. The most common symptoms of patients with uremic pleuritis included dyspnea (100%), cough (55.6%), weight loss (50%), anorexia (44.3%), pleuretic chest pain (33.3%), and fever (16.7%). There was no differences in frequency of symptoms in patients with uremic pleuritis and cardiac failure but the frequency of fever was higher and dyspnea was lower in patients with parapneumonic effusion. Pleural leukocyte count in uremic pleuritis ranged from 30 to 4200 cells/µL. The differences in total number of leukocytes and the percentage of eosinophils in patients with uremic pleuritis, parapneumonic effusion, and cardiac failure were statistically insignificant but the percentage of lymphocytes and polymorphonuclears were higher in uremic pleuritis and parapneumonic effusion, respectively. Absence of a significant difference in total leukocyte number of inflammatory pleuritis of parapneumonic effusion and uremic pleuritis with cardiac failure may be explained by impaired leukocyte reaction in uremic patients which is responsible mechanism for lower than expected leukocyte numbers in peritonitis of patients on peritoneal dialysis. In our study, there was no difference in the mean ADA of patients with tuberculosis, 26.75 ± 14.68 IU/L, and patients with uremic pleuritis, parapneumonic effusion, and cardiac failure. Decreased mononuclear cells ADA biosynthesis and activity has been reported in hemodialysis patients. However, to our knowledge, decreased diagnostic value of pleural ADA in hemodialysis patients with tuberculosis pleuritis has not yet been reported. We found that the mean serum calcium level of patients with cardiac failure was lower than normal (8.25 ± 0.77 mg/dL) and the difference of serum calcium in patients with uremic pleuritis and cardiac failure was significant. There are articles demonstrating a cause and effect relationship between cardiac failure and hypocalcemia. In 47.1% of our 18 patients with uremic pleuritis continuation of dialysis with or without therapeutic pleural tap led to improvement of pleural effusion. Others need chest tube insertion. Two patients did not improve until after pleural decortications surgery.

**Conclusions.** In conclusion, parapneumonic effusion, uremic pleuritis, cardiac failure, volume overload, tuberculosis, and malignancy are probably the most common etiologies of pleural effusion in hemodialysis patients with respiratory complaints. Some pleural reactions in uremic patients such as increase in leukocyte count and ADA may be affected by immunosuppression of uremia or the influence of hemodialysis procedure. Uremic pleuritis should be considered in hemodialysis patients with lymphocyte-predominant exudate and fibrinous pleuritis after exclusion of other diseases.

**O602**

**The Effect of Nicotinamide in the Treatment of Hyperphosphatemia in Dialysis Patients**

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**Introduction.** End-Stage Renal Disease (ESRD) is associated with calcium and phosphate metabolism abnormalities that can result in severe bone disease and ectopic calcification of cardiovascular tissues. The phosphate level is more than 5.5 mg/dL in about 50% Of patients on dialysis. Phosphorus-restricted diets are essential for the prevention of these deleterious complications in ESRD patients. Many strategies are present for reduction of serum
phosphorus level in dialysis patients with some adverse effects. The aim of the present study was to evaluate the effect of nicotinamid (vitamin B3) as a phosphorous channel inhibitor, in the treatment of hyperphosphatemia in dialysis patients.

**Methods.** In a clinical trial, 60 patients who were on chronic hemodialysis and had serum phosphate level more than 5.5 mg/dL were selected meeting inclusion criteria. These patients were divided into 2 groups randomly, patients who received nicotinamid 500 mg/d as tablet for two months versus control group. Serum levels of calcium, phosphorus, alkaline phosphatase, iPTH were measured before and after 2 months administration of nicotinamid in both groups. Statistical analysis was performed using SPSS version 16 and P value < .5 was considered significant.

**Results.** No significant differences regarding the age, sex, and duration of dialysis were shown between 2 groups. Serum level of iPTH was reduced not significantly in nicotinamid treated group (P = .6) and serum level of phosphorous was reduced significantly in treated patients (P = .0001). Serum level of HDL was also reduced significantly in treated patients (P = .005).

**Conclusions.** In conclusion, it seems that Nicotinamide may be using as an alternative for controlling hyperphosphatemia and hyperparathyroidism in hemodialysis patients with lesser side effects.

O603

**Descriptive Analysis of Iranian Hemodialysis Registry**

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**Introduction.** The rising incidence and prevalence of chronic kidney disease is a worldwide public health problem. Having a national renal registry system for hemodialysis patients gives an overview of dialysis status of the country. In this report, we have provided the information of the practice of hemodialysis, and its population characteristics in Iran, collected through an online hemodialysis registry system.

**Methods.** Demographic, clinical, and laboratory data including Kt/v, urea, creatinine, P, Ca, K, Na, PTH, alkaline phosphatase, Hb, Ferritin, ALT, AST, and albumin of about 4520 patients from 428 hemodialysis centers over the country was assessed.

**Results.** Out of of 18160 dialysis patients, 60% (n = 10346) were male. The mean age of patients was 67.86 ± 16.7 years (67.42 ± 16.9 years for men and 68.42 ± 16.4 years for women). Two major causes of ESRD in our patients were DM (37.3%) and HTN (23.9%). In more than 4520 patients that the baseline data was provided, 42.3% of patients the Hb level was less than 10 mg/dL. 31.3% patients had hematocrit levels less than 30 mg/dL, and 20.5% had Ferritin levels less than 100 mg/dL. Only 20.3% of patients had serum calcium levels greater than 9.6 mg/dL. 45% and 15% of patients had cholesterol and TG levels higher than 300 mg/dL, respectively. Serum levels of PTH in 22.6% of patients were above 300 mg/dL, and 70.4% of patients presented with serum uric acid levels greater than 7 mg/dL. Serum albumin levels lower than 3.5 mg/dL was detected in 70% of patients. High (K ≥ 5 mg/dL) and low levels of potassium (K ≤ 3.5 mg/dL) in 47.2% and 2.3% of patients was observed, respectively. A pre-dialysis level of creatinine in 60% of patients reported to be between 5 to 10 mg/dL, and in 31% was above 10 mg/dL. Serum bicarbonate less than 12 was presented in 29.2%. Serum ALT and AST higher than 30 mg/dL was presented in 11% of patients. Majority of patients (75.7%) had three dialysis sessions per week and Kt/v less than 1.2 was seen in 33.8% of patients.

**Conclusions.** By desirable controlling of variables, we could improve the hemodialysis outcome. Having an overview of these characteristic provided by national registry can assist us in this matter.

O604

**Adequacy of Dialysis and Nutritional Status in Hemodialysis Patients**

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**Introduction.** Hemodialysis is the predominant technique for treating ESRD patients. Hemodialysis has proven effect on mortality and morbidity of hemodialysis patients, so evaluation of adequacy
of hemodialysis is very important. The purpose of this study was to assess Kt/v and TAC urea as methods of adequacy of hemodialysis and to define the relationship between Kt/v and TAC urea with nutritional index such as PCR, albumin, and BMI.

**Methods.** Thirty-seven end-stage renal disease patients on hemodialysis were enrolled to the study in Imam Khomeini hospital in Tehran.

**Results.** The mean age of patients was 50.14 ± 16.3 years and mean duration of hemodialysis was 95.21 ± 83.88 months. The mean Kt/v, mean TAC urea, and mean normalized PCR were 1.21 ± 0.24, 42.50 ± 10 mg/dL, and 1.01 ± 0.2 g/kg/d, respectively. The correlation between variables was established by the co-efficient of pearson. PCR correlated with Kt/v (P < .0001) and TAC urea (P < .0001). Kt/v did not correlate with TAC urea.

**Conclusions.** In this study, albumin correlated with TAC urea (P = .005) and PCR (P = .003). Albumin did not correlate with Kt/v. BMI did not correlate with PCR, Kt/v, TAC urea, and albumin.
P301
Epidemiology of Hepatitis C Virus Infection in ESRD Patients in Khuzestan Province, Iran

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Introduction. Liver disease caused by Hepatitis C Virus (HCV) in End-Stage Renal Disease (ESRD) patients causes significant morbidity and mortality. The aim of this study was to determine the prevalence of HCV infection and its relationship in ESRD patients living in the province of Khuzestan, Iran.

Methods. In a cross-sectional study from December 2010 to March 2011, all of ESRD patients treated with hemodialysis or Peritoneal Dialysis (PD) in the Khuzestan province enrolled for the study. A standardized questionnaire was used to collect social and demographic data including cause of ESRD and date of onset of PD or hemodialysis. Blood samples were tested for hepatitis C antibody (anti-HCV) by enzyme-linked immunosorbent assays (ELISA). The Research Center of Ahvaz Joundishapur University of Medical Sciences approved the study.

Results. In overall, 1117 ESRD patients were enrolled for the study. The prevalence of anti-HCV was 3.4% (38 patients, 20 males with Mean age of 45.29 years and 18 females with Mean age of 45.6 years). The most common cause of ESRD in anti-HCV positive patients was high blood pressure in 45.4%, followed by, DM in 28.7%, and unknown in 13.9%. We did not find any association between both sexes (P = .06) and between mean age of anti-HCV positive and negative patients (P = .59). There was a significant association between high blood pressure as cause of ESRD with anti-HCV positivity (P = .033).

Conclusions. Although, the prevalence of HCV infection among ESRD patients has decreased in recent years; however, it remains as a significant cause of viral hepatitis among these patients in Khuzestan province.

P302
Don’t Forget the Evaluation of Dialysis Adequacy in Your Hemodialysis Centers

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Introduction. Although the K/DOQI guidelines are recommended that hemodialysis patients need to evaluate for dialysis adequacy, however, it seems that most of hemodialysis centers forget this issue and hemodialysis patients are not received a minimum dialysis dose. In this study, we aim to determine the adequacy of dialysis by Kt/v in one of our hemodialysis centers in Shahid Beheshti hospital, Abadan, Iran.

Methods. In a cross-sectional study, we evaluated the value of Kt/v in hemodialysis patients of this center that were on dialysis more than 6 months. Blood sampling for Blood Urea Nitrogen (BUN) was done immediately before and after the dialysis session. For postdialysis BUN, our practice was to slow the blood pump to 100 mL/min and then take the blood sample 15 seconds later. We used following equation to estimate the KT/V from the Percent Reduction in Urea (PRU) [KT/V = (0.026 ×PRU) – 0.460].

Results. Fifty-four hemodialysis patients (28 females and 26 males) with mean age of 39 ± 14.2 years were enrolled in the study. The most common cause of end-stage renal disease was hypertension followed by unknown, DM, Glomerulonephritis, urinary tract obstruction, and poly cystic kidney disease. Kt/v was less than 1.2 in 87% patients (n = 47). There was no significant difference in the value of Kt/v in men and women (P = .54) and in different hemoglobin concentration (P = .58).

Conclusions. The results of the study show that the most of hemodialysis patients in this center have not received minimum dialysis dose and we should evaluate and correct its causes.
**P303**

Fluconazol in the Treatment of Cutaneous Leishmaniasis in a Kidney Transplant Patient, a Case Report

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**Introduction.** Leishmaniasis is a well recognized opportunistic infection, which caused by an intracellular protozoan parasite belonging to genus leishmania and is transmitted by the bite of a phlebotomus sandfly. Although, in healthy subjects the mortality and morbidity from this infection is not significant and most of the patients cured with or without treatment; however, depending on the species of leishmania and especially in immunosuppressed patients including solid organ transplant recipients, it can cause an overwhelming visceral disease and lethal systemic illness.

**Case Report.** We report a case of cutaneous leishmaniasis in a 54 years old diabetic man after kidney transplantation. He had successful unrelated kidney transplantation 14 months before presenting skin lesions. In physical examination, the patient had multiple itchy and erythematous nodules and ulcers in diameter of 1×2 cm with central ulceration over his arms and hands compatible with a diagnosis of cutaneous leishmaniasis. The patient was given intramuscular Glucantime 20 mg/kg daily but he did not tolerate it. Finally, he was treated with Fluconazol and after two weeks the ulcers healed.

**Conclusions.** Cutaneous leishmaniasis should be considered as a differential diagnosis of each nodule or chronic skin lesion in kidney transplant patients. Although, antimonials are the first line drug, Fluconazol can also used in the treatment of cutaneous leishmaniasis.

**P304**

Prevalence of Idiopathic Hypercalciuria Among Primary School Children in Rasht, Iran

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**Introduction.** Hypercalciuria is defined as 24-hour urinary calcium excretion more than 150 mg in an adult female, more than 200 mg in an adult male, or more than 4 mg/kg/d in a child who weighs less than 60 kg. Hypercalciuria is the most common identifiable cause of calcium kidney stone disease. Idiopathic hypercalciuria is diagnosed when clinical, laboratory, and radiographic investigations fail to determine an underlying cause. Idiopathic Hypercalciuria (IH) is one of the most common human metabolic abnormalities. The aim of the present survey was studying the prevalence and the frequency of urinary tract signs and symptoms of IH in a healthy group of primary school children living in Rasht, Iran.

**Methods.** In a descriptive cross sectional study from April 2009 to February 2010 among primary school children from 30 schools in Rasht, the Capital city of Guilan province, Iran, 340 children aged 7 to 11 years (mean 9.3 years) were randomly included. Children whose urine calcium (UCa) to urine creatinine (UCr) ratio was more than 0.21 mg/mg, were defined as suspicious cases of hypercalciuria and entered the second stage which was 24-hour urine calcium measurement. Hypercalciuric children (24-hour UCa more than 4 mg/kg) were undertaken some complementary studies including history taking, clinical examination, filling questionnaires, family history study, some laboratory tests (BUN, Cr, Ca, P, ALP, and PTH) and sonography. *P* values < .05 were considered significant.

**Results.** The sample consisted of 180 (52.9%) boys and 160 (47.1%) girls. The UCa/UCr ratio was abnormal (> 0.21 mg/mg) in 47 (13.8%) children, 55.3% of them were boys and 44.7% girls. Among those who were tested for 24-hour urine calcium (UCa), 19 children whom 11 (3.3%) were boys and 8 (2.3%) were girls showed urinary calcium excretion more than 4 mg/kg/d (definitely positive) with normal concentrations of serum calcium, creatinine and BUN and we defined them as idiopathic hypercalciuria. Chi-square test showed there was no statistically significant difference between the prevalence rate in males and females (*P* = .21). Prevalence of IH in our study was estimated 5.6%. In 5 children, intermittent abdominal pain was present. Two boys and 1 girl showed microscopic hematuria of which one boy had nephrolithiasis. Two children had secondary enuresis. We found urinary tract
infection that was not recurrent and regarding its good response to antibiotics, we could not relate it to hypercalciuria.

**Conclusions.** We found a prevalence of 5.6% for idiopathic hypercalciuria in our region. Considering high prevalence of hypercalciuria and the frequency of attributed signs and symptoms and also its consequences, we suggest thinking about hypercalciuria while facing to all urinary system clinical manifestations.

**P305**

**Effect of Spironolactone-Placebo and Spironolacton-Losartan on Microalbuminuria in Type II Diabetes Patients**

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**Introduction.** Diabetic nephropathy is the most important cause of end-stage renal disease. Aldosterone has role in renal damage through induction of fibrosis, inflammation, and necrosis. It is supposed that the use of ARBs and ACE-inhibitors alone do not prevent the effects of aldosterone mediators. Therefore, because of availability of cheap and effective Spironolactone and its effect on reduced proteinuria, in our study we investigated the effect of spironolactone on the reduction of albuminuria in type II diabetic alone and in combination with Losartan.

**Methods.** This was a double blind random prospective study in 56 patients with type II diabetic nephropathy. The patients were divided into two groups: Group 1, Type II diabetic patients that receiving Spironolactone 25 mg daily plus half placebo tablets twice a day; Group 2, Type II diabetic patients who received 25 mg daily Spironolactone plus Losartan 12.5 mg twice a day. Albuminuria levels at the beginning and end of treatment were measured. Data from each group approach with Repeated measured data test, sum of squares test and t test. $P$ value < .05 were considered statistically significant.

**Results.** Out of 46 patients in the study, 14 patients (30.4%) were males and 32 (69.6%) were female. Fifteen patients (32.6%) randomized to Spironolactone and placebo treatment. Thirty-one patients (67.4%) were treated with Spironolactone and Losartan. Microalbuminuria after 3 months of Spironolactone therapy in the treatment group-placebo 62.5% and in the treatment group by Losartan 64.4% has fallen, which was not statistically significant difference ($P > .05$). In addition, effectiveness of two treatment groups was the same. Mean serum potassium after treatment in two treatment groups had no statistically significant difference ($P > .05$).

**Conclusions.** In this study, we have shown that treatment with 25 mg daily dose Spironolactone alone compared with treatment Spironolactone and Losartan in patients with diabetic nephropathy equally effective in reducing microalbuminuria.

**P306**

**The Effect of Intradialytic Aerobic Exercise on Serum Electrolytes Levels in Hemodialysis Patients**

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**Introduction.** Hyperkalemia and hyperphosphatemia play an important role in morbidity and mortality of hemodialysis patients. There are some evidences that showed intradialytic exercise increases removing of phosphate and potassium. This study examined the effect of intradialytic exercise on serum phosphate, calcium and potassium and hemoglobin (Hb) levels.

**Methods.** This study is a single-blind randomized clinical trial. The samples included 50 End-Stage Renal Disease (ESRD) patients (25 cases and 25 controls) who underwent hemodialysis in Imam Khomeini hospital, Sari, more than three months during 2010. Serum phosphate, calcium, potassium, and Hb levels were measured initially, at the end of 4th week and 8th week of study. Data were analyzed using parametric and non-parametric statistics tests.
Results. The mean age of subjects was 54.76 ± 12.55 years. Serum phosphate decreased 1.84 mg/dL that was significant in case group at the end of the study (P = .000). The rate of serum potassium was decreased to 0.69 mg/L that was also significant (P = .001). Statistically significant differences were not observed in other results.

Conclusions. Based on the findings of this study, it can be concluded that 15 minutes intradialytic range of motion exercise can significant reduce in serum phosphate and potassium, and slight increase of hemoglobin level.

P307
Correlation Between Serum Magnesium and Cardiovascular Disease in Hemodialysis Patients

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Introduction. There are associations between Magnesium (Mg) and some risk factors of cardiovascular disease and atherosclerosis, like lipid profile, albumin, CRP, phosphorus, Parathyroid Hormone (PTH), diabetes mellitus, and other clinical characteristics in hemodialysis patients. The aim of this study is to examine these associations.

Methods. This study was conducted on 103 patients with end-stage renal disease on maintenance hemodialysis for 3 sessions per week each lasting 4 hours. All patients were subjected to full history and clinical examination. Systolic and diastolic blood pressures were measured before dialysis. Laboratory assessments were performed before hemodialysis sessions and in 12-hour fasting states. Patients were divided into two groups according to their serum Mg concentration, as follows: < 2.6 mg/dL, n = 34; and ≥ 2.6 mg/dL, n = 69.

Results. The mean age of patients was 57.4 ± 15.4 years, with 66 (64.1%) being male. The mean serum Mg was 2.8 ± 0.55 mg/dL (range 1.7 to 7 mg/dL). There were no significant differences in serum Mg between lower and upper values of HDL, triglycerides, LDL and history of hypertension. Out of the 103 patients, only one person (1%), had hypomagnesemia (Mg level < 1.8 mg/dL), 41 (39.8%) had normal range of Mg level (1.8 to 2.6 mg/dL), and 61 (59.2%) had Mg level > 2.6 mg/dL. Serum Mg was positively correlated with plasma phosphorus level (P < .0001) and albumin (P = .01). There were no correlations between serum magnesium level and age, BMI, systolic BP before dialysis, serum calcium, LDL, HDL, TG, and Apo(a). Serum albumin (r=0.24, P=.01), and serum phosphorus level (r=0.35, P < .0001), had significant positive correlation with serum Mg.

Conclusions. In our study there was no correlation between Mg and atherogenic lipids, serum Ca, and PTH in maintenance hemodialysis patients.

P308
Percentage of Students Classified as Hypertensive or at Risk for Hypertension in School–Aged Children by Gender, Weight and Height in Tehran

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Introduction. Hypertension (HTN) is one of the most common diseases in the world and a major risk factor for cardiovascular, renal, and neurologic diseases. It seems that HTN and overweight in American children are a growing epidemic. The Aim of this study was to investigate the prevalence of hypertension in school-aged children.

Methods. In a cross sectional descriptive study, blood pressure and anthropometrics evaluations were performed on school-aged children in Tehran from 2008 to 2009. Children aged 7 to 11 years from 5 public schools in Tehran were included. Blood pressure, weight, and height measurement would be performed at the school. At each school screening, 3 seated-blood pressure, weight and height measurements were made. It was done at least after 3 minutes of rest and choosing proper cuff. Blood pressure was measured by a pediatric nephrologist and a pediatric assistant. For statistical analysis descriptive statistics, chi-square test, analysis of variance, post hoc analysis and logistic regression analysis were performed.
Results. We evaluated 425 school-aged children 54% were female and the rest of them were male. Mean of age for female students was 9.21 ± 1.31 and for male group was 8.54 ± 1.30. Totally, 24% of primary school children had HTN. The prevalence of HTN in female and male group was 35.4% and 11.2%, respectively. Totally, 12% of our study group was overweight (53 out of 425 students). In normotensive group, 15.5% of students were overweight and in hypertensive group 11.5% were overweight ($P < .41$). There was a significant difference in prevalence of hypertension between girl students of north of Tehran and girls of the other parts of Tehran ($P < .001$). There was not any significant difference in prevalence of hypertension between boy students of center part and east part of Tehran. We also revealed that overweight was more common in students of center part of Tehran. In boys’ student, there was not any significant difference in prevalence of overweight between geographic parts of Tehran.

Conclusions. We concluded that hypertension is a common problem in school-aged children and females are more susceptible to hypertension than males. Our study re-emphasized the need for prevention and control of high blood pressure in children to curb the global diseases burden due to HTN.

P309

Kidney Ultrasonography and DMSA Scan for Revealing Vesicoureteral Reflux in Children With Pyelonephritis, a 7-Year Prospective Cohort Study of 1500 Pyelonephritic Patients and 2986 Renal Units

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Introduction. The presence of Vesicoureteral Reflux (VUR) has been documented in 1.3% of normal population and 70% in infants with Urinary Tract Infection (UTI) and 15% to 25% in children with UTI. The main aims of this prospective cohort study were to compare the value of different imaging techniques [renal ultrasonography, cortical scintigraphy with technetium-99m dimercaptosuccinic acid (99mTc DMSA)] in detecting VUR in acute pyelonephritis.

Methods. Between June 2003 and March 2010 a prospective cohort study on patients 1 month to 14 years of age was done. Pediatric patients with documented UTI and imaging evidence of upper tract involvement were examined with DMSA scintigraphy, renal ultrasonography and Voiding Cystoureterography (VCUG). The evaluation to be performed in study group included a UTI profile, kidney ultrasonography and DMSA scan. Data were expressed as mean ± SD. Statistic test was two-tailed and was considered significant when $P \leq .05$.

Results. A total of 1500 pediatric patients were eligible for treatment of pyelonephritis. DMSA scans were normal in 20.2% and abnormal in 79.8% and the kidney ultrasonographies were reported normal in 68.5% and abnormal in 31.5%. There was a significant difference in ultrasonography reports between patients with normal and abnormal DMSA scans. The VCUGs were reported normal in 74.1% and VUR in 25.9% (VUR grade I in 10.7%, grade II in 7.3%, grade III in 4.7%, grade IV in 1.7% and grade V in 1.5%). The refluxes were unilateral in 62.9% and bilateral in 37.1%. We found a significant correlation between the presence of VUR in VCUG and urological abnormality in ultrasonography ($r=0.14$, $P < .001$). Among patients with severe abnormality in DMSA scintigraphy the percent of VUR was significantly higher than patients with normal DMSA or mild to moderate changes of DMSA scintigraphy.

Conclusions. We concluded that kidney ultrasonography and DMSA scan be used before VCUG in children with UTI. In addition, we recommend performing VCUG in first pyelonephritis only when they show abnormal kidney ultrasonography or DMSA scan results.

P310

Prediction of Vesicoureteral Reflux in Children with First Urinary Tract Infection by DMSA and Ultrasonography

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Introduction. Urinary Tract Infection (UTI) is one of the most common causes of febrile infectious diseases in children and Vesicoureteral Reflux (VUR) is a significant risk factor for UTI. Voiding Cystourethrogramy (VCUG) is a method of choice for evaluation of VUR. This study was conducted to predict VUR bytechnetium 99 m-labeled Dimercaptosuccinic acid(DMSA) and ultrasonography(US).

Methods. In this study, all children with first time acute pyelonephritis were selected and evaluated by DMSA and US, as soon as possible, and VCUG after negative urine culture. All children with final diagnosis of obstructive congenital anomaly were excluded. Then the sensitivity, specificity, positive predictive values, Negative Predictive Values (NPV), confidence interval of DMSA and US for prediction or exclusion of VUR were assessed.

Results. Among 100 children diagnosed with UTI, VUR was detected in 39 children and 60 (31.5%) units kidney had VUR. DMSA was abnormal in 103 units (51.5%) that 45 units had VUR (PPV = 44%) and 79 units with normal DMSA scan had not VUR (NPV = 81%). To evaluate kidney units that were abnormal by DMSA or US, 51 unites had VUR (PPV = 44%) and NPV was 56%.

Conclusions. DMSA scan alone or with US can not predict especially low grade VUR. However, according to NPV, it seems that we can predict the absence of VUR. So, more studies are needed to use DMSA and US instead of VCUG.

P311
Congenital Imperforate Hymen Causing Renal Failure, Case Report
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Introduction. Imperforate Hymen (IH) is one of the simple anomalies in the female genital organs, leading to hydrometrocolpos, and hematocolpos. Although, as association with other congenital anomalies has reported, isolated IH is the most common finding, occurring in 0.1% of girls born at term.

Case Report. A 5-month old girl infant with fever and poor feeding was admitted. She treated as a case of Urinary Tract Infection (UTI) regarding to active urine and leukocytosis, supported by isolation of E-coli from a supra-pubic urine sample. The serum creatinine level was 1.2 and 45 mg/dL, respectively. She was an undernourished infant who born via vaginal delivery, weighing 2.9 kg and no any overt congenital anomaly. The ultrasonographic evaluation revealed a normal left kidney, with mild fullness of collecting system. The right kidney was also not visualized. There was a large midline pelvic cystic mass, could be a hydronephric sac of an ectopic right kidney. The renal dimercaptosuccinic acid scan showed a normal left kidney with no any evidence of renal tissue at the right. The voiding cystourethrogramy revealed a vesicoureteral reflux grade V at the left, with a large bladder. The Intravenous pyelography (IVP) showed a long segment stricture of distal left ureter resulting left sided hydroureteronephrosis due to pressure effect of the pelvic mass. The right kidney was not visualized. The bladder was pushed right laterally. Regarding to the midline pelvic mass showing in the IVP, her external genitalia was carefully inspected. There was a bulging introitus, so the imperforate hymen was diagnosed and hymenectomy was performed. On cystoscopy, there was no any orifice in the right side of the trigone, bladder neck and urethra. A double J catheter was fixed on the left urinary system. She was discharged 3weeks later in good condition with normal renal function.

Conclusions. Careful examination of external genitalia including the hymen is an important part of evaluation of any newborn girl and who has UTI, particularly when she has a pelvic mass. The vaginal opening should be fully visible at birth. With early diagnosis, possible urinary complications of IH can be prevented only by a simple hymenectomy.

P312
Survey on Blood Lead, Copper, and Plasma Aluminum Concentrations in Dialysis Patients, a Multicentric Study
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Introduction. Chronic renal failure is a clinical
syndrome in which renal functions compromise irreversibly due to loss of nephron. These patients are susceptible to toxicity or deficiency of some trace elements. The heavy metals such as aluminium, lead, and copper are in this group.

Methods. Seventy-six chronic hemodialysis patients are selected consecutive and non-random from patients who refer to Imam Khomeini hospital of Tehran and Shohaday-e-Ashayer hospital of Lorestan. Patient blood sampling (4 cc) were taken before dialysis, in plastic acid-wash tubes for aluminium and copper, and in tubes included EDTA (anti coagulant) for lead. Information of each patient was recorded in a questionnaire.

Results. The mean serum level of lead, copper and aluminium in Tehran study were 7.003 ± 2.85 µg/dL, 100.9 ± 12.52 µg/dL, and 23.75 ± 6.57 µg/L, respectively. The mean serum level of aluminium was 21.9 µg/L, in Lorestan study.

Conclusions. According to normal blood level of aluminium, lead, and copper in the patients on the present study, probably their effects are minimized on the metabolic complications in patients. There is no significant difference between serum aluminium levels in two centres. Other trace elements must be studied in other studies.

P313
Renal Function Among Adult With Recurrent Calcium Kidney Stone Disease
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Introduction. Because the prevalence of nephrolithiasis and chronic kidney disease has risen over the past three decades, we sought to determine if person with a history of kidney stones have lower renal function compared to non-stone formers.

Methods. We conducted a case-control study enrolling 138 recurrent calcium kidney stone formers and 127 age and gender matched controls with no history of renal disease. All subjects were aged 30 to 55 years old, with no history of HTN, DM, CHF, and liver disease, and no urinary tract obstruction and medications can affect GFR. We estimated GFR by modification of Diet in Renal disease (MDRD) equation and categorized using cut points suggested by K/DOQI guidelines: stage I (GFR > 90 mL/min), stage II (60 < GFR < 89 mL/min), stage III (30 < GFR < 59 mL/min).

Results. Mean GFR in case group and control group was 89.90 (22.36%) mL/min and 89.28 (19.41%) mL/min, respectively ($P = .38$). Distribution of GFR among stone formers in stage I, II, and III was 53 (38.4%), 76 (55.1%), and 9 (6.5%); and in control group was 53 (41.7%), 72 (56.7%), and 2 (1.6%), respectively. There was no significant difference between GFR in all stages of CKD. Even though it seems to be an inverse correlation between GFR and number of passed stone and ESWL session in case group, it was not significant.

Conclusions. In our study, there was no significant difference of GFR in stone former and control group. Proportion of case in stage III is more than control but is not statistically significant that may be because of low sample size.

P314
Sodium Intake and Correlation of Urine Sodium in Spot Urine and 24-Hour Urine
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Introduction. Level of sodium (Na) intake has an important effect on blood pressure and cardiovascular disease, and reduction in salt consumption is important as primary prevention of hypertension and cardiovascular disease. Salt intake is estimated by either urine 24-hour sodium excretion or 24-hour dietary recall (which is unreliable). In this study, we evaluated salt intake and correlation of urine Na in spot urine and 24-hour urine collection.

Methods. We evaluated 271 male aged 30 to 50 years old for urine Na, creatinine, and chloride in urine 24-hour collection and spot urine. Subjects have no history of DM, HTN, liver disease, renal failure, and they were not on any medication. For
more accuracy, both urine 24-hour and spot urine were collected 2 times in 2 different days.

**Results.** The mean 24-hour urine sodium was 210.30 (79.53%) meq/d. Urine sodium was less than 100meq/d in 13 (4.8%), 100 to 170 meq/d in 84 (31%), 170 to 205 meq/d in 49 (18.1%), 205 to 256 meq/d in 56 (20.7%), and > 256 meq/d in 69 (25.5%) of subjects. There is a significant correlation between Na/Cr and Cl/Cr in spot urine and urine 24-hour sodium. Pearson correlation coefficient was 0.268 and 0.198, respectively (that is a weak correlation).

**Conclusions.** Salt intake is high in male and probably general population (> 12 g/d). Salt intake is < 6 g/d only in 5%, 6 to 10 g/d in 31%, 10 to 12 g/d in 18.1%, 12 to 15 g/d in 20.7%, and > 15 g/d in 25.5%. Sodium and chloride in spot urine is not a good predictor for sodium in 24-hour urine.

**P315**

**Urinary Incontinence in Children and Lower Urinary Tract Anomalies, Comparing Patients Younger and Older Than 5 Years**

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**Introduction.** This study was conducted to define prevalence of lower urinary tract anomalies in children 3 to 5, and > 5 years who wetted during day and night.

**Methods.** Sixty-seven neurologically normal children who referred nephrology clinic with chief complaint of day and night incontinence were evaluated in a 3-year period (2007 to 2009). Patients with neurologic deficits (myelodysplasia, spinal cord disorders, and mentally retarded children) excluded from study. Urine analysis, urine culture, renal -bladder ultrasonography, and Voiding Cystourethrography (VCUG) were done for all.

**Results.** Fifty-one patients ≥ 5 years (34 girls, 17 boys) and 16 patients < 5 years (9 girls and 7 boys) included in the study. 17 patients (1/3) had UTI at presentation, 12 patients ≥ 5, and 5 children < 5 years. Vesicoureteral Reflux (VUR) was reported in 7 (43.8%) and 9 (17.7%), in patients < 5 and ≥ 5 years, respectively (P > .05). In patients aged ≥ 5 years, VUR was found in 11 KUU, including VUR grade III (6), grade IV (2), grade V (2), and grade I (1), while in patients < 5 years, VUR was reported in 8 KUU, including VUR grade II, III, IV, and V in 2, 2, 3, and 1 KUU, respectively.

**Conclusions.** VUR is a common finding in children with day and night incontinence either those < 5 year or patients ≥ 5 years old. Since this study included a few number of small children (< 5 years old), more studies are needed to define lower urinary tract anomalies in small children with incontinence.

**P316**

**Response to Low Dose Oxybutynin in Childhood Enuresis**

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**Introduction.** To evaluate response to low dose oxybutynin (2.5 to 5 mg/d) in children with enuresis either monosymptomatic or non-monosymptomatic forms.

**Methods.** First 96 of 111 neurologically normal enuretic children who referred to nephrology clinic in a 3-year period (2007 to 2009) were chosen for evaluating response to the drug. The response of patients to the drug in one-month and 3-month periods was analyzed. Fifty-five out of 96 patients who received the drug, but did not have regular follow up excluded from study. Finally, 41 patients who were followed regularly enrolled study. No response, partially, and full responses were defined as decreased in bed wetting in the rate of 0 to 49%, 50 to 89%, and ≥ 90%, respectively.

**Results.** In first month of treatment full, partial, and no responses were reported in 3 (7.3%), 14 (34.1%), and 24 (58.6%) patients, respectively. In non-responder patients 6 (25%) and 5 (20.9%) patients had full and partial responses in 3-month treatment period, whereas 13 (54.1%) had no response. Actually 2/3 of patients responded to the drug in 3-month treatment. There was no significant differences between variables such are age (≤ 10 years, > 10 years), gender, family history of enuresis, and presence of absence of daytime symptoms in responder and non-responder groups (P > .05, for all). It means that cannot predict which groups of patients will have favorable responses.
Conclusions. According to our study low dose oxybutynin is a good treatment for childhood enuresis either those with symptoms of overactive bladder (NMNE) or those with MNE, and short course treatment (3-month therapy) results in reasonable response in majority of patients.

P317
Invasive Fungal Infection After Renal Transplantation

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Introduction. Invasive Fungal Infection (IFI) are a leading cause of infection-related mortality among kidney allograft recipients. The aim of our study was to estimate the incidence and etiology of systemic fungal infections in renal allograft recipients in Sydney transplant facility.

Methods. 471 kidney recipients, transplanted between 2000 and 2010 at the Westmead hospital renal transplantation center, Sydney, were retrospectively surveyed.

Results. IFIs developed in 10 of 471 patients (2.1%). With the average 42.9 ± 13, new kidney transplants per year, the incidence of IFI was 0.9 ± 0.6 for each year of transplantation. Four patients had received kidneys from living donors and seven from deceased donors with the average age of 50.5 ± 14 years. The mean time to IFI was 33 months after transplantation with majority within first two years. Cryptococcus Neoformans was responsible for 50% of episodes (n = 5) followed by Aspergillus Fumigatus (n = 3), Pseudallescheria Boydii (n = 3) and then a single case of Mucurmycosis (n = 1). Lungs (n = 5) followed by meninges (n = 4) and skin (n = 3) were the most commonly involved sites.

Conclusions. IFI remains a major concern in renal transplantation. A high index of suspicion is required for early diagnosis and treatment in order to reduce the mortality. In this regard, appropriate diagnostic tests are necessary, particularly for C. Neoformans.

P318
Peritonitis in Continuous Ambulatory Peritoneal Dialysis Patients in Shiraz, Iran

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Introduction. Peritonitis is one of the major concerns of chronic Peritoneal Dialysis (PD). It is one of reasons of switching to hemodialysis as well as one of the PD patients’ concerns when starting PD.

Methods. We used the data from Iranian PD registry and reviewed the files and charts of patients who experienced peritonitis in time period from 2004 to 2009.

Results. Thirty-seven PD patients with mean age of 49 ± 15 years (ranges from 19 to 83) were included in the analysis. They were all on chronic ambulatory PD with no cases of automated PD. Fifty episodes of peritonitis were reported in 37 patients, 27 patients with one, 7 patients with two, and 3 patients with three episodes. The mean time of developing the first episode of peritonitis after starting PD was 316 ± 329 days, 28 of them (75%) within the first year, especially within the first 3 months (n = 8, 21%). The time between the first and the second episodes was 175 ± 128 days (ranges from 18 to 407). Culture data of 20 episodes were available with 8 episodes (40%) were culture negative. Staph epidermis (n = 3, 15%) and Streptococcus spp. (n = 3, 15%) followed by Staph aurous (n = 2, 10%) were the most common isolates. Withdrawal from PD occurred in 14 patients because of peritonitis, 10 switched to hemodialysis and 4 resulted in death. Hypertension (45%), diabetes mellitus (32%), and both hypertension and diabetes (21%) were the most common underlying diseases.

Conclusions. Peritonitis is still the main reason for withdrawal from PD. Special attention should be paid to reduce the rate of peritonitis particularly in the first year of starting PD.
P319
Prevalence of Hypertension in Hemodialysis Versus Peritoneal Patients
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Introduction. Hypertension is a common problem in patients with End-Stage Renal Disease (ESRD); therefore, we assessed the prevalence of hypertension and the efficacy of dialysis therapy on patients with ESRD.

Methods. Sixty-six patients (48 ± 18.03 years, 43.9% males) were studied who were selected form Qaem hospital and Imam Reza hospital (clinical and educational centers in Mashhad, Iran), 34 Peritoneal Dialysis (PD) and 32 Hemodialysis (HD) patients. The blood pressures (BP) of the patients were evaluated in HD patients (pre- and post- dialysis) and PD patients. Hypertension was defined as an average predialysis systolic blood pressure ≥ 140 mmHg or diastolic blood pressure ≥ 90 mmHg (the seventh report of the Joint National Committee guidelines).

Results. Out of 66 patients, 15 (22.7%) were hypertensive. The prevalence of systolic and diastolic hypertension were not different among PD patients and predialysis HD patients (P = .036, P = .163, respectively). The prevalence of hypertension in PD patients and postdialysis systolic and diastolic hypertension in HD patients had a significant differences (P = .02).

Conclusions. Our results proved that in two modalities of renal replacement therapies (HD and PD), the control of blood pressure was similar. There was a significant correlation between fluid loss during HD and control of blood pressure.

P320
Demographic Characteristics of Peritoneal Dialysis Patients in Isfahan
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Introduction. There are more than 150 active Peritoneal Dialysis (PD) patients in Al-Zahra medical center in Isfahan. This center has been working since 2000. We evaluated demographic characteristics of our PD patients.

Methods. It is an observational descriptive study done in 2011. The information was collected from all patients’ records in Al-Zahra medical center until end of 2009.

Results. 1) Out of 240 patients, the mean age was 48 ± 21 years. 2) 57% of patients were male. 3) Diabetes mellitus, hypertension, and glomerulonephritides were the most common cause of chronic kidney disease, 44%, 30%, and 4%, respectively. 4) The most common age group was the 7th decade (22.5%) and the least common age group was the 2nd decade (5%). 5) 27% of patients were single. We do not have information about divorced and unmarried patients. 6) The level of patients’ education was 38%, 38%, and 24% for illiterate, under diploma, and diploma or university education, respectively. 7) The number of co-morbid diseases (cardiovascular, diabetes mellitus, etc.) in our patients was 13%, 41%, 25%, 15% for none, one, two and three co-morbid diseases, respectively. 8) History of hemodialysis: 54% had history of hemodialysis equal or less than 6 times. 9) Body mass index of our patients < 19, 19 to 25, 26 to 30, and > 30, were 15%, 51%, 29%, and 5%, respectively. 10) In 77% of our patients, peritoneal dialysis was the first choice for renal replacement therapy. 11) PD was used as renal replacement therapy as a positive selection for 85% of patients.

Conclusions. PD was the first choice of renal replacement therapy in most of our PD patients and used as a positive selection. It shows that PD has become a popular form of renal replacement therapy and we need more PD centers to cover patients.

P321
Does Intraperitoneal Heparin Affect the Level of CA125 in Peritoneal Dialysis Effluent of Peritoneal Dialysis Patients?
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Introduction. Cancer Antigen 125 (CA125) level in dialysate effluent is a marker of mesothelial cell mass in stable Peritoneal Dialysis (PD) patients and declines with duration of PD. Heparin also has anti-inflammatory effect, and may reduce the deleterious effects of peritoneal dialysis solutions on mesothelial cells. The aim of this study was to evaluate the effect of heparin on prevention of mesothelial cell loss by measuring CA125, a marker of mesothelial cell mass.

Methods. In a double blind randomized clinical trial, 74 Adult Continuous Ambulatory Peritoneal Dialysis (CAPD) patients were enrolled the study and divided into two groups, each group contained 37 patients. The first group received 5000 units intraperitoneal (IP) heparin daily added to dialysate and the second group received IP distilled water daily as placebo. Patients were followed for 9 months and effluent CA125 level was measured by ELISA method, before the study, 4.5 months and after 9 months. Patients should not have used heparin more than one time per week before the study and should not have had peritonitis during the month before the study or during the study; otherwise, they exit. The data were analyzed by t test, chi-square and repeated measure ANOVA.

Results. The mean effluent CA125 levels were 17 ± 19 U/mL and 18 ± 20 U/mL (at the beginning), 15 ± 10 U/mL and 20 ± 30 U/mL (after 4.5 months), and 7 ± 11 U/mL and 8 ± 10 U/mL (at the end of the study) in the heparin and placebo group, respectively. CA125 changes was not significant between groups (P = .58), but was significant within groups (P < .001). There was not any relationship between CA125 level and age, sex, cause of renal failure, and duration of peritoneal dialysis (P > .05).

Conclusions. We did not find any relationship in CA125 effluent level between patients using IP heparin or placebo; however, IP CA125 level was decreased in both groups, which may indicate that heparin has no effects on mesothelial cell mass as shown by CA125 level. Time on dialysis causes chronic injury to peritoneal mesothelial cells and less production of CA125 by these cells.

Introduction. Adult-onset stills disease (AOSD) is a systemic inflammatory disorder, characterized by spiking fever, skin rash, and arthritis. However, the renal involvment is a rare manifestation of the disease. Here we report a case of a 23-year old female diagnosed with AOSD with kidney disease presentation.

Case Report. We describe here a 23-year old female with history of intermittent polyarthritis, fever and flu like symptoms, since 4 years ago. She was treated with Prednisolone and NSAIDs; however, she did not fully respond to medications. Since two years ago, she was found to have several episodes of disease flare up with multisystemic manifestations, including high spiking fever, arthralgias, lymphadenopathy, striking hyperferritinemia, and nephrotic range proteinuria with a normal serum BUN and creatinine concentration levels. Renal biopsy was associated with the minimal histological changes. Laboratory tests for other diseases were negative. By excluding other diseases, diagnosis of AOSD was suggested. Azathioprine and steroid were started for her and NSAIDs was discontinued. However, the proteinuria was still existed after several months of therapy. By changing the medication to Cyclosporine, low dose steroid, and NSAIDs; proteinuria was decreased toward normal ranges.

Conclusions. Clinicians should be aware that proteinuria can be a manifestation of still’s disease. In these patients, urinalysis and renal function should be routinely monitored.

The Effectiveness of Low Dose Daclizumab Compared With Standard Regimen for Acute Rejection Prevention After Renal Transplantation in Kerman, Iran

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**Introduction.** One of the most important therapeutic problems in kidney transplant patients is preventing of acute graft rejection. The purpose of this study was to investigate the efficiency of low dose Daclizumab for prevention of acute kidney graft rejection in living donor recipients.

**Methods.** This clinical trial study was performed on 120 living donor kidney recipients who were admitted in kidney transplant ward of Azfalipor hospital, Kerman. Sixty patients, as a case group, received Cyclosporine, Mycophenolate Mofetil, and Prednisolone plus Daclizumab at a dose of 1 mg/kg before transplantation and then two weeks later. The others received all above except Daclizumab. All patients were followed up at least for 6 months.

**Results.** The rate of acute rejection was significantly lower in case group (6.7 versus 18.3, \( P = .048 \)). The six months graft survival rates at case group were 95% and at control group 85%. The 12 and 18 months graft survival rates were 95% in case group and 82% in control group. The mean graft survival time was significantly different between two groups (at case group 17.2 months and at control group 14.8 months, \( P = .040 \)). There was a significant difference in 6 months graft survival between the women of the case and control groups (97% versus 74%, \( P = .02 \)) but it was similar for the men (94% and 92%). The incidence of serious infection was similar in the case group to that in the control group.

**Conclusions.** The use of induction therapy with two doses of Daclizumab in living donors kidney recipients reduces the incidence of acute rejection with improving graft survival espacially in women and dosen’t result in more infectious complications.

**P324**

**Severe Febrile Illness With Acute Kidney Injury After Swimming in River**

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**Introduction.**

**Case Report.** A 21-year old female felt ill 3 weeks after swimming in a river. She developed fever, chills, severe headache, myalgia, arthralgia, generalized weakness, transient skin rash, blurred vision, and glossitis. The patient developed elevated serum creatinine (5.6 mg/dL), elevated liver enzymes and CRP, pancytopenia. Urinalysis showed microscopic hematuria without proteinuria. Microagglutination titre for leptospirosis was 1/200 (In her endemic area, titres less than 100 is accepted as normal value). The patient treated with Ampicillin. Treatment led to a rapid improvement of patient’s condition and also of the laboratory findings.

**Conclusions.** Leptospirosis is considered in febrile patients with severe headache, fever, elevated liver enzymes, acute kidney injury, and a history of close contact to potentially contaminated water.

**P325**

**Correlation between Inflammatory Cell Infiltration and Histopathologic and Clinical Manifestations of Lupus Nephritis**

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**Introduction.** Lupus Nephritis (LN) is one of the severe manifestations of Systemic Lupus Erythematosus (SLE) which is associated with an increased morbidity and mortality, part of which is related to the side effects of immunosuppressive therapy. Determining the subsets of infiltrating cells in kidney biopsy and their correlation between histological presentation, clinical, or serological data might help in instituting novel targeted therapy and predicting prognosis.

**Methods.** Thirty-five patients with biopsy-proven diagnosis of LN were evaluated retrospectively, during 2007 to 2009, for systemic lupus erythematosus disease activity index (SLEDAI), Glomerular Filtration Rate (GFR), proteinuria, hematuria, and serologic findings. Paraffin-embedded specimens were classified according to WHO classification and immunohistochemical staining was performed to determine CD20+, CD3+, CD68+ cells, and their pattern of distribution.

**Results.** Twenty-nine female and 6 male patients...
with mean age of $31.4 \pm 8.9$ years (18 to 49 years) and SLEDAI of $19.2 \pm 10.5$ were included. All patients had proteinuria with mean amount of $3315.1 \pm 3.6$ mg/d, 12 patients with nephrotic range proteinuria and 29 patients had hematuria. Mean serum creatinine was $1.6 \pm 1.1$ mg/dL. Ninety-one percent were ANA positive and 22 patients had class IV LN. Tubulointerstitial CD3+ cells infiltration was present in all the samples with mean of $11.5 \pm 5.9$ cell/mm² and was correlated with the chronicity index ($r = 0.466$). Tubulointerstitial infiltration of CD68+ cells (mean of $10.1 \pm$ cell/mm²) was correlated with creatinine level at presentation, GFR, and chronicity index ($r = 0.473, 0.443, -0.385$; respectively). Tubulointerstitial infiltration of CD20+ cells (mean of $4.3 \pm 3.1$ cell/mm²) and intraglomerular infiltration of CD3+, CD68+, and CD20+ cells (mean of $0.5 \pm 0.7, 0.2 \pm 0.9$, and $6 \pm 3.2$ cell/glomerulus; respectively) were not significantly correlated with clinical, paraclinical, and pathological variables.

**Conclusions.** The correlation between tubulointerstitial infiltration of macrophages and chronicity indices of nephritis may suggest a key role of macrophages in pathogenesis and/or prognosis of LN.
Forth Day

Friday, November 25
O701
Chronic Peritoneal Dialysis for End-Stage Renal Disease, a Single Center Experience in Shiraz, Iran

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Introduction. Peritoneal Dialysis (PD) program was established in 2004 in Shiraz. Along with hemodialysis and renal transplantation, it is an option for chronic renal failure patients who become end-stage and need Renal Replacement Therapy (RRT).

Methods. We analyzed the data from Iranian PD registry for the period between 2004 and 2009. All patients with peritoneal dialysis of at least three months duration were included.

Results. A total of 114 PD patients with mean age of 44.2 ± 17 years (range 13 to 81 years) were included in the analysis. They were all on Chronic Ambulatory PD (CAPD) with no cases of automated PD. Seventy patients (61.4%) were female. Seventy five patients (65%) were put on PD from the start, while 39 (34%) were switched from hemodialysis to PD, with 24 of them (63%) had underwent 6 or more sessions of HD. PD as the first line of RRT was selected in 79% (positive selection). The underlying diseases for end-stage renal disease were hypertension (35%), diabetes mellitus (22%), glomerulonephritis (10%), and autosomal dominant polycystic kidney disease (4%). In terms of level of education, 20% were illiterate and 41% had at least high school education. Death occurred in 14 patients, only one of them was due to peritonitis, others were due to non-PD related etiologies (80% due to cardiovascular problems). Switching to hemodialysis occurred in 15 patients due to peritonitis (60%), PD failure (13%), and mechanical complications (13%).

Conclusions. PD is a safe method of RRT. As many PD patients had experienced some sessions of hemodialysis before starting PD, preparing the suitable patients with chronic renal failure for PD before reaching ESRD can be helpful.

O702
Peritonitis in Iranian Children on Continuous Ambulatory Peritoneal Dialysis, the Second Report From Registry

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Introduction. Our previous nationwide study in children on Continuous Ambulatory Peritoneal Dialysis (CAPD) showed high rate of peritonitis. This is the second follow up study to evaluate the change of the rate of peritonitis in children under treatment.

Methods. All children, younger than 16 years old, treated by CAPD in six main pediatric nephrology wards in Iran between 1998 and 2009 were included in this historical cohort study. Peritonitis rate was calculated. A $P < .05$ was considered significant.

Results. From 2183 cases in the list of registry, 199 patients aged less than 16 years. The mean age was 6.64 ± 5.65 years. Fifty-four episodes of peritonitis were officially reported. The cumulative follow up time was 75 month. Before 1997, peritonitis rate was 1:6.5 patients/month, between 1997 and 2001 was 1:14, and 2001 afterward it has improved to 1:15 patients/month. The etiology of peritonitis was 59% culture negative, 16.6% gram-negative bacteria, and 11% Staphylococcus aureus. Peritonitis accounts for 61.5% of reasons to exit CAPD.

Conclusions. The peritonitis rate of Iranian children on peritoneal dialysis has dramatically decreased since launching CAPD in Iran but it is still far from the standard.
Does Intraperitoneal Heparin Affect the Peritoneal Transport in Continuous Ambulatory Peritoneal Dialysis Patients?

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Introduction. Peritoneal Dialysis (PD) solutions containing glucose deteriorate peritoneal membrane by producing advanced glycation end-products. Heparin has anti-inflammatory properties and it has been shown that heparin may increase peritoneal transport of creatinine, urea, and dialysate volume. It also reduces the risk of fibrin formation in PD catheters. In this study, we investigate the effect of heparin on peritoneal transport characteristics in Continuous Ambulatory PD (CAPD) patients.

Methods. In a double blind randomized clinical trial we enrolled 74 adults (> 18 years old) CAPD patients (> one month on PD), without history of peritonitis in the last month. Patients were randomly divided into two groups. The case group received 5000 IU Intraperitoneal (IP) heparin daily for 9 months and control group received IP distilled water as placebo, once daily. Peritoneal equilibration test (PET) was used as a measure of peritoneal transport and it was calculated by the ratio of peritoneal fluid creatinine (DCr), to plasma creatinine (PCr); before, mid time (4.5 months), and at the end of the study (9 months). The data analyzed using chi-square, t test and repeated measured ANOVA.

Results. The mean age was 49 ± 16 and 58 ± 10 years in case and control groups, respectively. 65% and 57% of patients were male in case and control groups, respectively (P = .4). 30% and 35% of causes of renal failure was diabetes mellitus in case and control groups, respectively (P = .6). The duration of PD therapy was 16 ± 12.8 and 20 ± 15.3 months in case and control groups, respectively (P = .22). The DCr to PCr ratio before, at mid time, and at the end of the study (9 months). The data analyzed using chi-square, t test and repeated measured ANOVA.

Conclusions. This study has not shown any difference in peritoneal transport (calculated by PET) with or without use of intraperitoneal heparin in CAPD patients.
by hypertension (24.4%) and GN (8.2%). The major comorbidities included DM, HTN, CHF, and 46.5% of patients experienced one, 25.6% two, 10.4% three, and 2.8% four or more of these comorbidities. In univariate analysis; DM, CHF, CAD, CVA, cirrhosis, COPD, and the number of insults, as well as; age, education, marital status, appetite, edema, 24 hours urine volume, the state of appropriateness, and selection type were significantly associated with patient’s survival. In multivariate analysis, DM (HR = 1.88), inappropriateness (HR = 1.26), number of comorbidities (HR = 1.2), and high LDL (HR = 1.003), high serum albumin level (HR = 0.42), positive selection (HR = 0.50), good appetite (HR = 0.6), and low level of education (HR = 0.84) remained significant factors. Systolic blood pressure, appropriateness status, appetite, presence of HTN, and CHF were significantly affected technique survival in univariate analysis.

Conclusions. As it has been proven by several studies, risk factors like DM, level of serum albumin, number of comorbidities and state of selection and appropriateness are among the most relevant parameters affecting survivals.
P401
The Effect of Aromatherapy on Pruritus in Patients Undergoing Hemodialysis
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Introduction. One of the most common problems in patients with end stage renal failure undergoing hemodialysis is pruritus. Pruritus is an irritating sign that can affect directly on life quality of patients with chronic renal failure. Unfortunately, available treatments have been failed to relieve this sign and kidney transplantation is considered the definite treatment of this problem. But one of recent methods outlined to relieve pruritus is complementary medicine and the goal of this study is also to investigate the effect of aromatherapy on pruritus of patients undergoing hemodialysis

Methods. This study is a kind of pre and post clinical trial that was done in dialysis centers of hospitals affiliated to Isfahan University of Medical Sciences in 2009. An easy sampling was done among patients undergoing hemodialysis who were under hemodialysis three times weekly and each time for 3 to 5 hours and had pruritus score 3. All samples participated in the study were under massage by hand without fistula for 7 minutes using 3 to 5 mL oils of lavender, mint and tee tree diluted by 5% for two weeks (6 sessions).

Results. Twenty patients with end stage renal failure with pruritus completed the study. Analysis of data showed that aromatherapy relieves pruritus significantly.

Conclusions. Aromatherapy relieves pruritus in patients undergoing hemodialysis significantly but generalization and application of this method depend on more comprehensive and exact studies in this field.

P402
The Effect of Sodium and Ultra Filtration Profile Combination and Cold Dialysate on Hypotension During Hemodialysis and Its Symptoms
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Introduction. One of the most prevalent side effects of hemodialysis is intradialytic hypotension and its symptoms. Using sodium profiles 3 and ultra filtration profile 3 and cold dialysate are the ways to overcome this problem. Since none of these methods could control this complication lonely, this study was done to investigate the effect of combination of two methods on intradialytic hypotension.

Methods. This study was a cross over clinical trial in which 24 patients experienced intradialytic hypotension frequently, underwent three different methods of treatments during 9 successive hemodialysis sessions. Group 1 used sodium profile 3 and ultra filtration profile 3, group 2 underwent hemodialysis with cold dialysate, and group 3 received combination of both methods. Blood pressure was controlled before, during (3 times) and after hemodialysis.

Results. Findings showed that although there was no significant difference considering intradialytic hypotension and its symptoms in two groups of sodium profile 3 and ultra filtration profile 3 and cold dialysate and the combination group (P > .05), but there was a significant difference considering the mean of blood pressure in three groups (P < .05). In combination group, drop of systolic and diastolic blood pressure was less than that in groups using each of methods.

Conclusions. Concerning the decreased rate of hypotension using combination method, nurses can use this method to decrease intradialytic hypotension and help the patients undergo hemodialysis for enough time and improve their quality of life.

P403
Frequency of BK Virus Nephropathy Among Renal Transplant Recipients
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Introduction. BK Virus Nephropathy (BKVN) is a severe complication of renal transplantation and
recognized as a cause of graft loss in patients. We aimed to assess the frequency and clinical characteristic of BKVN.

**Methods.** In this descriptive analytical, cross sectional study, we prospectively investigated BK and JC virus infection, and BKVN among 31 unselected consecutive renal transplant recipient (21 men and 10 women) during the first year after renal transplantation. Urine was tested for presence of Decoy Cells (DC) and DNA of BK and JC virus (DNAuria) by PCR. The load of BK and JC virus in serum (Viremia) was assessed in patients with DNAuria 3, 6, 9, and 12 months after transplant. Renal biopsy was performed if allograft dysfunction or viral load > 107.

**Results.** The frequency of DC, BK and JC virus was 16.1%, 29%, and 22.6%, respectively. BK or JC viruria was found in 45.2% (n = 14 cases) of patients. BKVN was not detected in 1-year follow up of these patients.

**Conclusions.** Despite high frequency of BK virus infection, there was no case of BKVN among renal transplant recipients; therefore, it seems screening of all renal transplant recipients is not cost-effective.

### P404

**Seroprevalence of Hepatitis E Among Iranian Renal Transplant Recipients**

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**Introduction.** Renal transplant recipients are known to be susceptible for viral infections with more severe clinical presentations compared to healthy persons. Hepatitis E is generally a self-limited disease that is caused by Hepatitis E virus. Recently, Hepatitis E becomes more important in organ transplant recipients, because of new findings regarding the chronicity potential in this patient group. This study was aimed to evaluate the seroprevalence of anti-HEV IgG among kidney transplant recipients of Urmia in the north-west region of Iran.

**Methods.** Ninety-one patients were selected randomly among patients who underwent kidney transplantation in Urmia, Iran. Each patient was experimented for anti-HEV IgG using ELISA method (Diapro, Italy).

**Results.** Twenty-eight subjects (30.8%) were seropositive for anti-HEV IgG. Seropositive cases are generally older than seronegative cases ($P=.009$). There was no correlation between HEV infection and the level of education ($P=.21$), the history of blood transfusion ($P=.16$), history of pre-transplantation hemodialysis ($P=.23$). There was no significant difference among the serum ALT level of anti-HEV seropositive and seronegative cases. Multinomial logistic regression indicated no significant relationship between HEV infection and increase in ALT levels, even when controlled for the treatment with Azathioprine ($P=.79$, OR=1.12).

**Conclusion.** The anti-HEV IgG has a high prevalence in Iranian kidney transplant recipients, and it is significantly higher in comparison with previous studies in general population or hemodialysis patients. This could be of great clinical importance considering the probable persistent HEV infection in the setting of graft recipients suggested in the literature.

### P405

**Comparison of the Effects of Sirolimus and Cyclosporine on Left Ventricular Hypertrophy in Kidney Transplant Recipients, A 1-Year Single Center Prospective Cohort Study in Dr. Shariati Hospital, Tehran, Iran**

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**Introduction.** Left Ventricular Hypertrophy (LVH) is an independent risk factor for death and cardiovascular disease in kidney transplant recipients. Here, we compared the effects of Cyclosporine and Sirolimus (SRL) on LV Mass Index (LVMI) one year after renal transplantation.

**Methods.** Fifty-five end-stage renal disease patients who had LVH without diabetes and hypertension and received single-kidney transplant from living unrelated donor during year 2009 to 2010 were selected. Patients were randomly divided into either SRL group (n=19) or control (received Ciclosporine, n=36). Patients’ blood pressure (BP) was checked twice per month and conventional
antihypertensive therapy was used to keep BP on ≤ 130/80 mmHg. Left Ventricular Mass (LVM), Left Ventricular End Diastolic Dimension (LVEDD), Inter Ventricular Septal Dimension (IVSD), and Posterior Wall Dimension (PWD) was measured by echocardiography at baseline and 1 year after transplantation.

**Results.** Two groups were matched based on age and gender (male 63.16% in SRL vs 58.3% in control). We detected a significant regression of LVH in patients on SRL compared to control group (P < .0001). In contrast to control group, significant decrease in LVMI (137.59 versus 108.08 g/m²; P < .0001), IVSD (12.86 versus 10.79 mm, P < .0001) and PWD (13.03 versus 10.98 mm, P < .0001), compared to baseline was observed in SRL group. Changes in other variables including LVEDD and BP in two groups were not significant.

**Conclusions.** SRL therapy may cause regression in LVH in renal transplant recipients, mainly by decreasing LV wall thickness, without affecting the LVEDD and BP. Effect of SRL on LVM most probably does not have a hemodynamic origin. Future multi-center studies with larger sample size are recommended to establish the effectiveness of SRL for better cardiovascular outcomes in renal transplant recipients.

**P406**

**The Effect of Pentoxyphilin for Reduce of Erythropoietin Needs in Hemodialysis Patients**

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**Introduction.** Anemia in hemodialysis patients is a major problem in untreated patients. The primary mechanism of anemia in these patients is inadequate production of erythropoietin by kidney. Since a large number of dialysis patients despite receiving adequate doses of erythropoietin are still anemic, to use a medication that improves response of patients to erythropoietin therapy can prevent next disorders such as cardiovascular diseases. Therefore, we evaluate the effect of Pentoxyphilin to reduce erythropoietin required dose in hemodialysis patient in Alzahra hospital. The aim of this study was the reduction of dose of erythropoietin in drug group.

**Methods.** This study was a randomized clinical trial at hemodialysis center in Alzahra hospital in Isfahan. Fifty patients were randomly divided in two groups. Twenty-five patients in drug group that received one Pentoxyphilin tablet (400 mg/d, Amin factory) and 25 patients in placebo group that received one placebo tablet per day from the same factory. Duration of study was 6 months. Inclusion criteria were hemoglobin below 10.7 and using of at least 12000 UI of EPO per week. During the study, Patients visited by the physician in terms of side effects including dyspepsia, nausea, vomiting, headache, vertigo, angina-like pain, and tremor, monthly. At the beginning and end of the study, hemoglobin, albumin, iron, TIBC, ferritin, PTH, and dose of erythropoietin were measured. The response of patients evaluated by hemoglobin level (increasing one g/dl per month in hemoglobin level was considered to proper response to target hemoglobin levels that reached 12 g/dL) and the doses of EPO was evaluated at the end of the study.

**Results.** According to results of this study, erythropoietin needs didn’t decrease in Pentoxyphilin group and the difference between two groups was not statistically significant (P > .05). In addition serum hemoglobin, iron, and ferritin was not increased in Pentoxyphilin group.

**Conclusions.** Considering the lack of significant increase in hemoglobin and iron and ferritin levels in drug group, it should be better to continue the study with greater sample size and longer time to obtain definite result.

**P407**

**The Effect of Aerobic Exercise on the Symptoms of Restless Leg Syndrome and Quality of Life in Hemodialysis Patients**

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**Introduction.** Restless leg syndrome (RLS) is a sensory motor disorder that is characterized by motor restlessness resulting in an uncontrolled urge
to move the affected body part. The symptoms are accentuated during rest, later in the day, and during the early night and are usually but not always associated with disagreeable leg sensations. RLS has been treated pharmacologically with satisfactory results; however, side effect and rebound phenomena have been reported. The aim of current study were to evaluate the effect of 16 weeks aerobic exercise training in the severity of RLS and the quality of life of patients with RLS on hemodialysis.

**Methods.** Twenty-six patients on hemodialysis with untreated RLS were assigned to either the exercise group (n = 13) and or to the control group (n = 13). The exercise group participated in supervised intradialytic aerobic exercise training and the control group continued usual activities.

**Results.** There was a significant reduction of RLS score ($P = .003$) but no significant improvement of quality of life ($P = .6$) in exercise group in comparison with placebo group.

**Conclusions.** Aerobic exercise training is effective in reducing RLS complaints but not in improving of quality of life in patients with RLS on hemodialysis.

**P408**

Is There Any Difference Between Use of Gentamycin and Mupirocin Ointments in Decrease Exit Site Infection Ratio in Peritoneal Dialysis Patients?

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**Introduction.** More than thirty-five thousands end-stage renal disease patients initiated renal replacement therapy in recent years in Iran. Two main dialysis modalities for these patients are Peritoneal Dialysis (PD) and haemodialysis. The peritoneal membrane is used as blood filter in PD method but this is not without complications. The most important complications are staphylococcus aureus peritoneal exit site infections (ESI) and consequently peritonitis that may cause to removal of the peritoneal catheter. We do not have any established treatment for such situations; therefore, antibiotics prophylaxis maybe a good idea for decrease ESI rates. As there was no clear data about the best ESI antibiotic prophylaxis regimen in Iran, we decided to compare the effect of local application of Mupirocin versus Gentamycin ointments to decrease ESI ratio in Isfahan, Iran.

**Methods.** This clinical trial study was performed on PD patients in Isfahan PD centers in 2009 to 2010. After sample selection according to inclusion criteria, they were divided to two groups randomly, one group received Gentamycin and another group received Mupirocin for a six month period. All patients were instructed about the correct way of daily use of local ointments. They were examined for the presentations of ESI before, along and at the end of the study. Finally, prevalence of ESI was compared in two groups by chi-square.

**Results.** From 130 patients in PD centers of Isfahan, 121 were enrolled to the study. Then, they were divided randomly to sixty patients (eighteen males, forty-two females) with the mean age of 59 ± 16.4 years and sixty one (thirty two males and twenty-nine females) with average 51 ± 14.6 years old that received Gentamycin and Mupirocin, respectively. Three of them were died from cardiovascular accidents and one was excluded because of renal transplantation in duration of study. After six months, in Gentamycin used group, eight patients had acute exit site infection but there was no exit site infection in another group that shows statistically significant difference between two groups ($P < .0001$).

**Conclusions.** Our study shows the risk of ESI was increased in Gentamycin used patients versus who used Mupirocin. Therefore, we recommend use of Mupirocin to decrease ESI and perhaps peritonitis chance in PD patients.

**P409**

Mono-Symptomatic and Non–Mono Symptomatic Nocturnal Enuresis, A Clinical Evaluation

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**Introduction.** According to association of daytime symptoms, nocturnal enuresis is divided into 2
subgroups: mono-symptomatic (MNE) and non-mono symptomatic (NMNE) forms. This study was conducted to review clinical and ultrasonography findings in different subtypes of enuresis and compare organic and functional pathologies of lower urinary tract in children with MNE with those who have NMNE. 

**Methods.** During 3-year period neurologically normal children with enuresis who referred nephrology clinic were enrolled study. Urinalysis, urine culture, and ultrasonography were done for all. Voiding CystoureteroGraphy (VCUG) was used to evaluate anatomy of lower urinary tract and Urodynamic Studies (UDS) were done to assess bladder function.

**Results.** Hundred and eleven children enrolled study (60 boys and 51 girls). Forty-three (38.8%) with MNE and 68 (61.2%) with NMNE, aged 5 to 17 years. Constipation, encopresis, and urge incontinence were significantly more frequent in patients with NMNE + daytime incontinence ($P < .05$). Increased of bladder wall thickness and irregularity of bladder wall were the most common findings ($P > .05$). One patient with MNE and 9 with NMNE+ daytime incontinence had vesicoureteral reflux ($P = .02$). Evidences of bladder dysfunction were noted in about half of patients who underwent UDS, with higher prevalence in cases with NMNE + daytime urinary incontinence ($P > .05$).

**Conclusions.** Bowel symptoms and urological abnormalities of lower urinary tract are significantly more prevalent in cases with NMNE who have daytime incontinence. We recommend VCUG in patients with NMNE who have daytime incontinence.

**P410**

Role of High Dose Hydrochlorothiazide in Hypercalciuric Urolithiasis of Childhood

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**Introduction.** Hypercalciuria is one of the most common metabolic factors responsible for stone formation in pediatric stone formers. This study was designed to analyze the role of Hydrochlorothiazide (HCTZ) in pediatric stone formers with hypercalciuric urolithiasis considering hypocalciuric action of the drug and to define possible factors affecting response to the drug.

**Methods.** In a 2 year period (2007 to 2008), 19 pediatric stone formers with idiopathic hypercalciuric urolithiasis prospectively were evaluated at a single academic center. Patients followed every 2 to 3 months by checking urine specific gravity, urine PH and urine calcium and Cr excretion (in 24-hour or random urine) and renal Ultrasonography (US). HCTZ was recommended in a dosage of 1 to 2 mg/kg/d with polycitra-potassium (combination of citric-acid and potassium citrate) 1 meq/Kg/d.

**Results.** Out of 19 patients, 12 (63.2%) were female and 7 (36.8%) were male (F/M ratio = 1.7). Eleven patients (57.2%) had a history of urolithiasis in their relatives and 7 (36.4%) did not have any family history of stone. In 2 cases, the family history was unknown. Patients received HCTZ for 2.5 to 15 months (6 ± 3 months). Seven patients (36.8%) reached normocalciuria. Resolution of hypercalciuria associated with decreased stones sizes was seen in 1 (5.3%) and stone free condition in 4 (20%) patients. In 3 patients, although urinary calcium excretion reached the normal limits, stones sizes did not change during follow up.

**Conclusions.** Although approximately in 50% of patients after treatment with HCTZ, calcium excretion rate returned to normal range, stone size changes seen in 5 (26.2%). Interestingly, all 5 patients with favorable response were female. According to our study, combination of diet modification and HCTZ has reasonable hypocalciuric effects, but it is not efficient in stopping stone formation process.

**P411**

Withdrawal From Peritoneal Dialysis and Switching to Hemodialysis in Chronic Peritoneal Dialysis Patients


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**Introduction.** Hypercalciuria is one of the most common metabolic factors responsible for stone formation in pediatric stone formers. This study was designed to analyze the role of Hydrochlorothiazide (HCTZ) in pediatric stone formers with hypercalciuric urolithiasis considering hypocalciuric action of the drug and to define possible factors affecting response to the drug.

**Methods.** In a 2 year period (2007 to 2008), 19 pediatric stone formers with idiopathic hypercalciuric urolithiasis prospectively were evaluated at a single academic center. Patients followed every 2 to 3 months by checking urine specific gravity, urine PH and urine calcium and Cr excretion (in 24-hour or random urine) and renal Ultrasonography (US). HCTZ was recommended in a dosage of 1 to 2 mg/kg/d with polycitra-potassium (combination of citric-acid and potassium citrate) 1 meq/Kg/d.

**Results.** Out of 19 patients, 12 (63.2%) were female and 7 (36.8%) were male (F/M ratio = 1.7). Eleven patients (57.2%) had a history of urolithiasis in their relatives and 7 (36.4%) did not have any family history of stone. In 2 cases, the family history was unknown. Patients received HCTZ for 2.5 to 15 months (6 ± 3 months). Seven patients (36.8%) reached normocalciuria. Resolution of hypercalciuria associated with decreased stones sizes was seen in 1 (5.3%) and stone free condition in 4 (20%) patients. In 3 patients, although urinary calcium excretion reached the normal limits, stones sizes did not change during follow up.

**Conclusions.** Although approximately in 50% of patients after treatment with HCTZ, calcium excretion rate returned to normal range, stone size changes seen in 5 (26.2%). Interestingly, all 5 patients with favorable response were female. According to our study, combination of diet modification and HCTZ has reasonable hypocalciuric effects, but it is not efficient in stopping stone formation process.
Introduction. Peritoneal Dialysis (PD) and hemodialysis are treatment options as renal replacement therapies for end-stage renal disease patients. Switching between PD and hemodialysis occurs due to several reasons. In the present study, we aimed at evaluating the causes of stopping PD and switching to hemodialysis.

Methods. We analyzed the data of Iranian PD registry and retrospectively investigated PD patients of five PD centers in Iran. All patients who had spent at least three months on PD were included.

Results. A total of 780 patients with mean age of 50.8 years were under follow up of these centers. They were all on chronic ambulatory PD with no cases of automated PD. 428 patients were female (54%). Five hundred forty five patients (70%) were put on PD from the beginning, while 235 (30%) were switched from hemodialysis to PD, with 91 of them (38%) had undergone 6 or more sessions of hemodialysis. PD as the first line of RRT was selected in 79% (positive selection). Switching from PD to hemodialysis occurred in 121 patients (15%). The reasons for that were peritonitis (n = 62, 51%), mechanical problems (n = 19, 16%), PD failure (n = 18, 15%), catheter dysfunction (n = 8, 6%), and the patients’ decision (n = 3, 2%).

Conclusions. Peritonitis contributes to most cases of withdrawal from PD to hemodialysis. Reduction of the peritonitis rate with appropriate measures could decrease the rate of withdrawal from PD.

P412
Comparing The Effect of Unfractionated Heparin with Low Molecular Weight Heparin on Serum Potassium Level in Hemodialysis Patients

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Introduction. Administration of Unfractionated Heparin (UFH) is associated with rising of serum potassium, particularly in patients with renal failure. As an anticoagulant during hemodialysis, it is not yet clear whether Low Molecular Weight Heparin (LMWH) could reduce the risk of hyperkalemia in chronic hemodialysis patients.

Methods. We performed a randomized case-control study at Shahid Faghihi hemodialysis center. A total of 40 patients with at least 6 months duration on hemodialysis were selected and were randomized to case and control groups with 20 patients in each group. The case group received UFH 5000 unit intravenously (IV) and control group Enoxaparin 40 milligram IV, both as single bolus without any additional dosages, for intradialytic anticoagulation. Serum levels of potassium, BUN, and phosphate were measured at the beginning and after 4 weeks.

Results. As rough indices of nutritional status and hemodialysis efficacy, there was no significant difference between two groups in terms of BUN and phosphate level, at the beginning and the end of the study. Of those receiving UFH and LMWH, 6 (30%) and 7 (35%) had diabetes mellitus, respectively (P = .500). The serum level of potassium decreased significantly after 4 weeks of Enoxaparin (4.5 ± 0.5 versus 4.3 ± 0.4, P = .001) while it remained unchanged in those receiving UFH (4.6 ± 0.6 versus 4.6 ± 0.5, P = .486). The reduction of serum potassium was also significant in diabetic patients receiving Enoxaparin (4.8 ± 0.5 versus 4.6 ± 0.6, P = .006), but not in UFH group with diabetes (4.8 ± 0.6 versus 4.7 ± 0.6, P = .876).

Conclusions. For anticoagulation during hemodialysis, replacing UFH by LMWH can reduce serum potassium level in chronic hemodialysis patients.

P413
Outcome and Clinical Findings of Peritoneal Dialysis Patients in Isfahan, Iran

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Introduction. There are more than 150 active
peritoneal dialysis (PD) patients under treatment in Al-Zahra medical center in Isfahan. This center has been launched since year 2000. We evaluated the outcome and clinical findings of our PD patients to assess the quality of treatment in peritoneal dialysis patients.

**Methods.** It is an observational descriptive study done on 2011. The information was attained from all patients’ records in Al-Zahra medical center from 2005 until end of year 2009. A total of 243 patients’ records were evaluated.

**Results.** 1) Patients’ outcome were 2%, 15%, 12%, 23%, and 48% for recovery of renal disease, return to hemodialysis, transplantation, death, and active PD; respectively. 2) In general, 15% of patients referred to hemodialysis. The causes of referral to hemodialysis were: peritonitis (53%), membrane failure (22%), catheter malfunction (11%), patient choice (5.5%), mechanical dysfunction (5.5%), and others (3%). 3) The prevalence of diabetes mellitus, hypertension, congestive heart failure, coronary artery disease, and respiratory disease were 38%, 67%, 25%, 13%, and 5%; respectively. The prevalence of cerebrovascular disease, cirrhosis, and cancer each were < 0.1%. 4) Peripheral edema was absent in about 50% of patients. 5) The appetite of our patients was appropriate, intermediate, and bad in 17%, 78%, and 5%; respectively. 6) Of 243 patients, 23% died, and of 47 patients who died, 2% death due to PD causes and of 46 death due to non PD causes, 78.5% due to cardiac disease, 2% for each infection and cerebral disease, and 17.5% are unknown. 7) The result of peritoneal equilibration test (PET) showed low transporter and high transporter were the least common (9%) and the most common (44%) type of PET, respectively.

**Conclusions.** Peritonitis was the least common cause of mortality in our patients. Transplantation was the most common cause of PD patient loss. The most common cause of mortality was cardiovascular disease.

**P414**

**Laboratory Evaluation of Peritoneal Dialysis Patients in Isfahan, Iran**

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**Introduction.** There are more than 150 active Peritoneal Dialysis (PD) patients under treatment in Al-Zahra medical center in Isfahan. This center has been launched since 2000. We evaluated the laboratory values of our PD patients to assess the quality of management.

**Methods.** It is an observational descriptive study done in 2011. The information was collected from all patients’ records in Al-Zahra medical center from 2005 until end of year 2009. A total of 243 patients’ records were evaluated.

**Results.** 1) Peritonitis episodes have happened in 50 patients, of these 1, 2, 3, 4, and 6 episodes have occurred in 68%, 20%, 6%, 4%, and 2% of patients, respectively. 2) Exit site infection has occurred in only 15 patients, of these patients, 87% had only one episode. 3) The most common organism in peritonitis was staphylococcus epidermidis (29%) and the next was staphylococcus aureus (8%). 29% of our cultures were negative. 4) Laboratory results for mean hemoglobin (Hb), creatinine and parathyroid hormone (PTH) levels were 10± 1.7 g/dL, 6.3 ± 2.6 mg/dL, and 181 ± 182 pg/mL, respectively. For serum Ca, serum phosphate, and serum albumin were 8.6 ± 0.65 mg/dL, 4.6 ± 1.24 mg/dL, and 3.6 ± 0.58 g/dL, respectively. 5) The mean serum level for cholesterol, triglyceride, LDL, and HDL were 187 ± 49, 168 ± 93, 113 ± 33, and 38 ± 7.3 mg/dL, respectively. 6) The mean 24-hour urine volume and 24-hour peritoneal net ultrafiltration volume were 740 ± 623 mL and 887 ± 548 mL, respectively.

**Conclusions.** The most common organism in peritonitis was staphylococcus epidermidis like other references and serum level of Hb, Ca, P, and PTH were at desirable level but albumin level was lower than our expectation.

**P415**

**Evaluation of Serum Zinc Concentration in Dialysis Patients Compared with Normal Control**

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**Introduction.** There are more than 150 active Peritoneal Dialysis (PD) patients under treatment in Al-Zahra medical center in Isfahan. This center has been launched since 2000. We evaluated the laboratory values of our PD patients to assess the quality of management.

**Methods.** It is an observational descriptive study done in 2011. The information was collected from all patients’ records in Al-Zahra medical center from 2005 until end of year 2009. A total of 243 patients’ records were evaluated.

**Results.** 1) Peritonitis episodes have happened in 50 patients, of these 1, 2, 3, 4, and 6 episodes have occurred in 68%, 20%, 6%, 4%, and 2% of patients, respectively. 2) Exit site infection has occurred in only 15 patients, of these patients, 87% had only one episode. 3) The most common organism in peritonitis was staphylococcus epidermidis (29%) and the next was staphylococcus aureus (8%). 29% of our cultures were negative. 4) Laboratory results for mean hemoglobin (Hb), creatinine and parathyroid hormone (PTH) levels were 10± 1.7 g/dL, 6.3 ± 2.6 mg/dL, and 181 ± 182 pg/mL, respectively. For serum Ca, serum phosphate, and serum albumin were 8.6 ± 0.65 mg/dL, 4.6 ± 1.24 mg/dL, and 3.6 ± 0.58 g/dL, respectively. 5) The mean serum level for cholesterol, triglyceride, LDL, and HDL were 187 ± 49, 168 ± 93, 113 ± 33, and 38 ± 7.3 mg/dL, respectively. 6) The mean 24-hour urine volume and 24-hour peritoneal net ultrafiltration volume were 740 ± 623 mL and 887 ± 548 mL, respectively.

**Conclusions.** The most common organism in peritonitis was staphylococcus epidermidis like other references and serum level of Hb, Ca, P, and PTH were at desirable level but albumin level was lower than our expectation.
**Introduction.** Homeostasis of trace elements including Zinc (Zn) is essential for metabolic processes and immune system. In this study, we measured blood level of Zn in patients under hemodialysis and patients under peritoneal dialysis and normal healthy adults (control), and then compared the results in three groups.

**Methods.** We measured fasting level of Zn with spectrophotometry in patients of the three groups in Imam Reza hospital. We also measured hsCRP with integra-immuno turbio metric assay. The patients with malnutrition were excluded from study.

**Results.** We studied 40 patients in a group under peritoneal dialysis, 39 patients in a group under hemodialysis and 47 normal healthy subjects in last group. Patients and control group were matched for age and sex. Level of Zn in patients under peritoneal dialysis was lower from the other two groups, and in patients under hemodialysis it was lower than normal healthy subjects. Difference between two groups of patients under hemodialysis and peritoneal dialysis was not statistically significant ($P = .09$).

**Conclusions.** According to lower level of Zn in patients under dialysis is suggested that these patients check for blood levels of Zn and consider zinc supplement if needed. Further studies are recommended in this regard.

**P416**

**Effect of Renal Transplantation on Biomarkers of Inflammation in End-Stage Renal Disease Patients**

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**Introduction.** The role of cytokines as inflammatory mediators in the outcome of transplanted kidney is suggested recently and inflammatory factors are suggested as risk factors for cardiovascular disease in End Stage Renal Disease (ESRD) patients. This study aimed to assess these inflammatory mediators before and six months after renal transplantation. **Methods.** Patients who underwent renal transplantation in Imam Reza hospital from March 2009 to April 2010 enrolled in this study. Conventional cardiovascular risk factors together with three main inflammatory factors such as hs-CRP, TNF-α, and IL-6 as nonconventional risk factors for end stage renal disease patients were evaluated before and six months after renal transplantation.

**Results.** Thirty patients with mean age of 38.6 years were included. The most common conventional cardiovascular risk factors were family history, smoking, and dyslipidemia. Blood pressure, glucose, liver enzymes, triglycerides, and white cell count did not differ significantly after renal transplantation but phosphorus, urea, creatinin, PTH, Na, and K decreased significantly after renal transplantation. Inflammatory markers including hs-CRP and IL-6 also decreased, but TNF-α significantly increased after renal transplantation.

**Conclusions.** Renal transplantation improves blood biochemistry in ESRD patients and may decrease the risk of cardiovascular diseases by controlling the inflammatory state.

**P417**

**Echocardiographic Evaluation of Left Ventricle in Patients With Mild Hypertension in Comparison With Control Group, a Historical Cohort Study**

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**Introduction.** Systemic hypertension is one of the major risk factor of heart failure and especially left ventricle dysfunction. Mild hypertension is mostly asymptomatic and remains as silent health problem for years that can lead to morphologic changes and functional alterations in myocardial structure. This study was designed to determine the left ventricle morphologic change in mild hypertensive patients compared with normal population using 2-dimentional echocardiography.

**Methods.** During this historical cohort study, 38 mild hypertensive participants in comparison with 37 normotensive ones were enrolled for left ventricle echocardiographic assessment. Smokers, alcoholic, history antihypertensive therapy, and some other characteristics were excluded from this study. Student t-test and ANOVA were selected statistical tests for analysis on SPSS version 19.

**Results.** The mean age of the study population was $47.45 \pm 9.35$ years. Ejection fraction had...
significant difference in two groups ($P = .001$) also interventricular septum and posterior wall in end systolic and end diastolic phase had meaningful difference ($P < .05$). LV mass index in two groups had significant difference too ($P = .001$).

**Conclusions.** The major parameters of left ventricle such as LV mass index and ejection fraction in mild hypertensive participants were in worse situation than normal group so that screening of hypertension in normal populations for early diagnosis and adequate therapeutic measures are recommended to avoid irreversible left ventricular dysfunctions.

**P418**

**Relation Between Secondary Hyperparathyroidism and Left Ventricular Hypertrophy in Hemodialysis Patients**

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**Introduction.** Patients with End-Stage Renal Disease (ESRD) may suffer cardiac abnormalities such as ventricular hypertrophy. Parathyroid Hormone (PTH) level has correlation with left ventricular mass in ESRD.

**Methods.** During this analytical cross-sectional study, patients evaluated by echocardiography for Left Ventricular Hypertrophy (LVH) and PTH was measured.

**Results.** Forty-six patients enrolled to the study. The mean age was 55 ± 5 years old. Twenty-seven (59%) patients were male and 19 (41%) females. Patients divided into 3 groups according to serum PTH: group I, 26 patients (56%) with PTH < 150 pg/mL; group II, 16 patients (35%) with 150 < PTH < 300 pg/mL; and group III, 4 patients (9%) with PTH > 300 pg/mL. Minimum and maximum PTH was 15 and 589, respectively. The mean PTH was 150 ± 127 pg/mL. Data were analyzed by SPSS and chi-square. LVH reported 60%, 66%, and 100% in group I, II, and III, respectively. Finally, a positive significant association between LVH and PTH was identified. PTH and LVH were correlated in patients with high PTH levels ($P = .049$).

**Conclusions.** We observed that patients with high PTH level have increased rate of LVH.

**P419**

**Improvement of Renal Function and Massive Pericardial Effusion After Treatment of Severe Hypothyroidism**

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**Introduction.** Thyroid hormones affect the functions of almost every body organ or tissue and hypothyroidism produces a wide range of metabolic disturbances. Primary hypothyroidism is associated with an elevation in serum creatinine level. This is essentially occurs in hypothyroidism because of the hypo-dynamic state, leading to reducing glomerular filtration rate and hypercreatinemia.

**Case Reports.** A 50-year-old woman came to our hospital due to generalized weakness, drowsiness, and generalized edema since one month before admission. She has history of diabetes mellitus and hypertension since 2 years ago. Physical examination revealed bradycardia (50 bpm), pallor, and generalized body edema. Laboratory data showed: creatinine 4.5 mg/dL; blood urea nitrogen 135 mg/dL; K 4.5 meq/L; thyroid stimulating hormone 27 mIU/mL; T4 2.1 µg/dL; T3 53 µg/dL; T3 RU 33%; antithyroproxidase 120 IU/mL; 24-hour urine collection 259 mg/dL, and estimated GFR 25 cc/min. In hospital course, she developed massive pericardial effusion. After 8 months of treatment with thyroxin (350 mcg/d), the patient returned without any symptoms and signs. The results of tests were: creatinine 1.6 mg/dL; blood urea nitrogen 97 mg/dL; thyroid stimulating hormone 5; T4 4.5 µg/dL; T3 60 µg/dL; T3 RU 33%; and estimated GFR 63 cc/min. Her pericardial effusion was resolved.

**Conclusions.** It seems hypothyroid can cause renal impairment or worsen renal function in preexisting illness. So diagnosis and treatment of hypothyroid patients with thyroxin in progressive renal failure could be very important in delaying the need for renal replacement therapy.
### Authors' Index

#### Authors Listed by Initials

**A**
- Abdi E, 4, 13
- Abdollahi A, 47
- Abediazar S, 20
- Abtahi SH, 11
- Afjei A, 19
- Afkhami Ardekani M, 5
- Afshari R, 67
- Afshari Saleh A, 30
- Aghaali M, 29, 30
- Aghel E, 39
- Aghighi, 42
- Ahankoob E, 22
- Ahmadi M, 15
- Ahmadinajad V, 41
- Ahmadpoor P, 55
- Ahmadzadeh A, 22, 49
- Akbari H, 22
- Akbari R, 35
- Akbarian S, 69
- Akha O, 46
- Alatab S, 62
- Alemzadeh Ansari MJ, 7
- Amini M, 26, 38, 42, 54
- Amirhakimi G, 33
- Andalib S, 6
- Aresteh MM, 28
- Ardalan MR, 59
- Asadi F, 26
- Asghari S, 4, 13, 35
- Ashegh H, 40
- Atabak S, 40, 52, 58, 65
- Ataei N, 58
- Ataipour Y, 4, 13
- Atapour A, 63
- Atrkar Roshan Z, 26
- Azarian AA, 34
- Azmadian J, 54, 65
- Azmadiany J, 59

**B**
- Bahmani B, 32
- Bakhshi J, 41
- Bakhtiar M, 31
- Barahimi H, 26
- Bashardoost N, 69
- Basiratnia M, 28, 33, 34, 58
- Basmenji S, 41
- Behzadi S, 52, 58
- Behzadnia N, 40
- Beladi Mousavi M, 7, 24
- Beladi Mousavi SS, 7, 8, 14, 24, 44, 45
- Besharati S, 26
- Boroumand AA, 3
- Burkhardt U, 18

**C**
- Chapman J, 52
- Chen S, 52

**D**
- Dalirani R, 48
- Daneshgar I, 22
- Daniel V, 2, 18
- Dehestani M, 68
- Dehghan M, 61
- Derakhshan A, 28, 34, 38
- Dormaneh B, 14
- Doustar Y, 6

**E**
- Ebadzadeh MR, 54
- Ebrahimi A, 10
- Eckerle I, 18
- Eftekhar Javadi A, 35
- Emami Naini A, 11, 64
- Eshraghi A, 11
- Esfandiari N, 47
- Esmailian R, 26
- Esmaili M, 38
- Esmaili Zand R, 15
- Etemadi J, 41
- Ezzatзадe Jahromi S, 52, 58, 65, 66

**F**
- Fakhimi N, 52, 58, 65
- Fakhrkiai H, 19
- Fallahzadeh MA, 28
- Fallahzadeh MH, 28, 34, 58
- Farajizadeh Z, 64
- Fardad S, 53, 59
- Fathi M, 6
- Fazeli F, 54
- Firoozan A, 55
- Fotoohabadi S, 33
- Fusch G, 2

**G**
- Ganji A, 34
- Ganji MR, 26, 29, 39, 40, 59
- Garjani A, 6
- Ghaderi R, 55
- Ghafar Moghadam A, 40, 59
- Ghaforifard M, 61
- Ghaneh Sherbafi F, 58
- Ghasami M, 63
- Ghasempour A, 63
- Ghazi H, 30
- Gheissari A, 38
- Ghods A, 61
- Gholami F, 61
- Ghorbani A, 7
- Ghoreifaiyeh A, 3
- Golabchi K, 64
- Golzar K, 7

**H**
- Habibzadeh S, 40, 54

**I**
- Iancu M, 2
- Ilali E, 46

**J**
- Jabbari Moghaddam Y, 23
- Jafari L, 21
- Jafari Nahjavani MR, 20

**K**
- Kajbaf Z, 14
- Kakoi S, 40
- Kalantar M, 16
- Kalantar Mehrjardi N, 25
- Kamal Hedaiat D, 62
- Karamifar H, 33
- Karamizadeh Z, 33
- Karimi A, 47
- Karimi S, 53, 64, 67
- Kashi Z, 46
- Kazemian M, 19
- Kazemnejad E, 25
- Keshvazi A, 59
- Khaleed A, 10
- Khalilian M, 41
- Khanzadeh A, 7
- Khatami A, 47
- Khataee MR, 3, 47
- Khazaee MH, 31
- Khazaeipour Z, 47
- Khorasani M, 2, 25, 26
- Kiani G, 9
- Kohani M, 25
- Kolahdouze S, 4

**L**
- Lahdou I, 2
- Latif M, 68
<table>
<thead>
<tr>
<th>Authors’ Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lebadi MK, 26</td>
</tr>
<tr>
<td>Lessanpezeshki M, 42</td>
</tr>
<tr>
<td>Madani A, 58</td>
</tr>
<tr>
<td>Maham S, 48</td>
</tr>
<tr>
<td>Mahdavi Zafarghandi R, 3</td>
</tr>
<tr>
<td>Mahmoodi M, 34</td>
</tr>
<tr>
<td>Mahmoodi MS, 66</td>
</tr>
<tr>
<td>Mahmoodzadeh H, 58</td>
</tr>
<tr>
<td>Makhdoomi K, 40</td>
</tr>
<tr>
<td>Makhlough A, 46</td>
</tr>
<tr>
<td>Malakoutian T, 4, 13</td>
</tr>
<tr>
<td>Masjedizadeh A, 44</td>
</tr>
<tr>
<td>Masodi S, 62</td>
</tr>
<tr>
<td>Merikhi A, 58</td>
</tr>
<tr>
<td>Miladipour AH, 16, 50, 50</td>
</tr>
<tr>
<td>Mirbolouk F, 25</td>
</tr>
<tr>
<td>Mirchi E, 47</td>
</tr>
<tr>
<td>Mirfaii SZ, 34</td>
</tr>
<tr>
<td>Mobbarra M, 28</td>
</tr>
<tr>
<td>Moghadmi Mousavi S, 40</td>
</tr>
<tr>
<td>Mohamadi Baneh A, 42</td>
</tr>
<tr>
<td>Mohammad E, 12</td>
</tr>
<tr>
<td>Mohammadi SM, 5</td>
</tr>
<tr>
<td>Mohammadpoor AH, 68</td>
</tr>
<tr>
<td>Mohkam M, 19, 47, 48, 58</td>
</tr>
<tr>
<td>Mortazavi M, 4, 11, 53, 61, 63, 64, 66</td>
</tr>
<tr>
<td>Morvaridi MR, 52, 58</td>
</tr>
<tr>
<td>Motamed Najjar M, 32</td>
</tr>
<tr>
<td>Motamednia F, 7</td>
</tr>
<tr>
<td>Mousavi A, 29</td>
</tr>
<tr>
<td>Nikinia MR, 40</td>
</tr>
<tr>
<td>Noshad H, 8, 9, 27</td>
</tr>
<tr>
<td>Nouris Majelan N, 39, 40, 40, 65</td>
</tr>
<tr>
<td>Omidvar S, 34</td>
</tr>
<tr>
<td>Opelz G, 2, 18</td>
</tr>
<tr>
<td>Ossareh S, 4, 12, 13, 32, 40</td>
</tr>
<tr>
<td>Ostavan VR, 34</td>
</tr>
<tr>
<td>Oltakesh H, 58</td>
</tr>
<tr>
<td>Paeizi R, 53</td>
</tr>
<tr>
<td>Pahlavan Sabagh MR, 3</td>
</tr>
<tr>
<td>Pakhepetat M, 52, 58</td>
</tr>
<tr>
<td>Parin Hedayat Z, 55, 67</td>
</tr>
<tr>
<td>Parsa N, 6</td>
</tr>
<tr>
<td>Parsi A, 7</td>
</tr>
<tr>
<td>Parvin M, 50</td>
</tr>
<tr>
<td>Peyami B, 24</td>
</tr>
<tr>
<td>Pezeshki A, 61</td>
</tr>
<tr>
<td>Poorrezagholi F, 55</td>
</tr>
<tr>
<td>Pourdowlati G, 40</td>
</tr>
<tr>
<td>Poursharif L, 40</td>
</tr>
<tr>
<td>Raci Hashemi SS, 20</td>
</tr>
<tr>
<td>Raees Jalali GA, 21, 52, 58</td>
</tr>
<tr>
<td>Rafiei M, 69</td>
</tr>
<tr>
<td>Rahbar M, 45</td>
</tr>
<tr>
<td>Rahimian M, 40</td>
</tr>
<tr>
<td>Rajaei F, 26</td>
</tr>
<tr>
<td>Rashid Farokhi F, 40</td>
</tr>
<tr>
<td>Rasoulzadegan MH, 69</td>
</tr>
<tr>
<td>Rehiani H, 53, 59, 66</td>
</tr>
<tr>
<td>Roohani F, 28</td>
</tr>
<tr>
<td>Roohi H, 9</td>
</tr>
<tr>
<td>Roomizadeh P, 11</td>
</tr>
<tr>
<td>Rozbeh J, 21, 66</td>
</tr>
<tr>
<td>Rostamzadeh Z, 62</td>
</tr>
<tr>
<td>Sabzghabaei F, 15</td>
</tr>
<tr>
<td>Saddadi F, 29, 38, 39, 54, 62</td>
</tr>
<tr>
<td>Sadeghi M, 2, 18</td>
</tr>
<tr>
<td>Sadeghi R, 65</td>
</tr>
<tr>
<td>Safaei A, 24</td>
</tr>
<tr>
<td>Safaei-asl A, 45</td>
</tr>
<tr>
<td>Safariyan VR, 67</td>
</tr>
<tr>
<td>Sagahi H, 29, 30</td>
</tr>
<tr>
<td>Sagheb MM, 21, 22, 52, 58</td>
</tr>
<tr>
<td>Salami M, 12, 69</td>
</tr>
<tr>
<td>Salari A, 2, 25, 26</td>
</tr>
<tr>
<td>Salarifar M, 3</td>
</tr>
<tr>
<td>Salehi Behbehani SM, 8, 44</td>
</tr>
<tr>
<td>Samadi K, 34</td>
</tr>
<tr>
<td>Samadian F, 55</td>
</tr>
<tr>
<td>Samavat S, 55</td>
</tr>
<tr>
<td>Sanadgol H, 39, 40, 59, 65</td>
</tr>
<tr>
<td>Sarhangi Z, 38, 58</td>
</tr>
<tr>
<td>Savaj S, 4, 35</td>
</tr>
<tr>
<td>Savoj J, 35</td>
</tr>
<tr>
<td>Schefold JC, 2</td>
</tr>
<tr>
<td>Schnitzler P, 2, 18</td>
</tr>
<tr>
<td>Sedghipour M, 62</td>
</tr>
<tr>
<td>Seidaei H, 10</td>
</tr>
<tr>
<td>Seifi S, 40, 42</td>
</tr>
<tr>
<td>Sephervand N, 62</td>
</tr>
<tr>
<td>Sephidmuy M, 41</td>
</tr>
<tr>
<td>Seyed Nejad Fahim SH, 2</td>
</tr>
<tr>
<td>Seyrafian S, 40, 53, 59, 63, 64, 65, 66, 67</td>
</tr>
<tr>
<td>Shafiabadi A, 32</td>
</tr>
<tr>
<td>Shafiee Z, 54</td>
</tr>
<tr>
<td>Shafiee F, 61</td>
</tr>
<tr>
<td>Shahbazian H, 7</td>
</tr>
<tr>
<td>Shahgholian N, 61</td>
</tr>
<tr>
<td>Shahidi S, 4, 11, 63</td>
</tr>
<tr>
<td>Shahram F, 54</td>
</tr>
<tr>
<td>Shakeri MT, 32</td>
</tr>
<tr>
<td>Sharifi Movaghar M, 23</td>
</tr>
<tr>
<td>Sharifian M, 15, 38, 48</td>
</tr>
<tr>
<td>Sharifipour F, 5, 30, 31, 34, 53</td>
</tr>
<tr>
<td>Shayesteh AA, 44</td>
</tr>
<tr>
<td>Shekholeslami H, 8</td>
</tr>
<tr>
<td>Shirmohamadi Z, 62</td>
</tr>
<tr>
<td>Shojaei A, 38, 40, 59</td>
</tr>
<tr>
<td>Siami GA, 18</td>
</tr>
<tr>
<td>Sohrab Nazari S, 22</td>
</tr>
<tr>
<td>Sohrvardi SM, 54</td>
</tr>
<tr>
<td>Soleymanian T, 29, 40</td>
</tr>
<tr>
<td>Soltani HR, 68</td>
</tr>
<tr>
<td>Sorkhi H, 48</td>
</tr>
<tr>
<td>Tabbataei A, 62</td>
</tr>
<tr>
<td>Tabrizian S, 12</td>
</tr>
<tr>
<td>Taghavi R, 3</td>
</tr>
<tr>
<td>Taheri S, 53, 59, 63, 66, 67</td>
</tr>
<tr>
<td>Takallo R, 31</td>
</tr>
<tr>
<td>Tayebi Khosroshahi H, 41</td>
</tr>
<tr>
<td>Tayebi N, 67</td>
</tr>
<tr>
<td>Teimouri S, 68</td>
</tr>
<tr>
<td>Terness P, 2</td>
</tr>
<tr>
<td>Tofangchih S, 14</td>
</tr>
<tr>
<td>Torbati P, 55</td>
</tr>
<tr>
<td>Vahdatpour B, 63</td>
</tr>
<tr>
<td>Valavi E, 7, 14, 22, 49</td>
</tr>
<tr>
<td>Valiani M, 61</td>
</tr>
<tr>
<td>Yousefi Chaijan P, 8</td>
</tr>
<tr>
<td>Zahed N, 67, 68</td>
</tr>
<tr>
<td>Zare J, 28</td>
</tr>
<tr>
<td>Zebarjadi M, 12</td>
</tr>
<tr>
<td>Zeer M, 2</td>
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<td>Zeraatii A, 3, 30, 31, 34, 44, 53</td>
</tr>
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