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ABSTRACT BOOK

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9th BANTAO CONGRESS
ORAL PRESENTATIONS

OP-01 - Hemodialysis, Apheresis, Artificial Organs

Aortic Calcification, Serum Fetuin-A and Long-Term Mortality in Chronic Haemodialysis Patients

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Objective: To investigate the associations between aortic calcification index (ACI) and fetuin-A, a calcification inhibitor, levels and their impact on mortality in chronic haemodialysis (HD) patients.

Methods: Eighty-five patients (45 males) consecutively entered the study. ACI was calculated as the proportion of abdominal aortic circumference covered by calcification on consecutive non-contrast computed tomographic scans. hsCRP was measured by nephelometry and fetuin-A was determined by ELISA.

Findings: ACI was positively correlated with age (p<0.001), time on HD (p<0.001), and hsCRP (p=0.003) and negatively with albumin (p=0.004) and fetuin-A (p<0.001). In multivariate analysis, fetuin-A remained a significant predictor of ACI values (p=0.001). During a mean follow-up of 34±20 months, 31 patients died. Kaplan-Meier analysis showed that compared with patients with ACI <50%, patients with ACI ≥50% displayed higher mortality (p=0.02). In univariate Cox regression analyses, mortality was associated with age (p=0.001), history of diabetes (p=0.03), albumin (p=0.006), fibrinogen (p=0.002), hsCRP (p=0.001) and ACI (p=0.007). In multivariate analyses, age, diabetes, fibrinogen and hsCRP remained independent predictors of mortality (p=0.005, p=0.002, p=0.02 and p=0.02 respectively).

Conclusions: In haemodialysis patients, ACI is associated with fetuin-A and inflammation and has an impact on mortality. However, inflammatory markers appeared a better predictor of long-term mortality in these patients.

OP-02 - Hemodialysis, Apheresis, Artificial Organs

N-Terminal Pro Brain Natriuretic Peptide Predicts Mortality in Patients with End-Stage Renal Disease in Hemodialysis

Gjulsen Selim, Olivera Stojceva Taneva, Nikola Stojcev, Saso Gelev, Arben Asani, Pavlina Dzekova Vidimliski, Lada Trajcevska, Galina Severova Andeevska, Vlado Pusevski, Aleksandar Sikole
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Background: In patients with end-stage renal disease in hemodialysis (HD), levels of N-terminal pro brain natriuretic peptide (NT-proBNP) are almost always raised. The aim of this study was to evaluate the role of NT-proBNP as a prognostic factor in terms of all-cause and CV mortality in HD patients.

Methods: We measured NT-proBNP before HD in 57 prevalent HD patients (mean age at beginning of HD 50.49±12.64 years, mean HD vintage 108.70±64.46 months) to examine the two years all-cause and CV mortality associated with baseline NT-proBNP concentrations.

Results: The mean pre-HD NT-proBNP value was 10229.61±10027.87 pg/ml (345-35000). During the 2-year follow-up, 14 out of 57 patients (25 %) had died, most from CV diseases (64%). Patients who died of CV causes had higher levels of NT-proBNP (17.004.56±10.549.00 vs. 8959.30±9509.74; p=0.025), as well as patients who died of all causes (14873.43±11588.36 vs. 8717.67±9109.49; p=0.011). There was an inverse correlation between NT-proBNP and haemoglobin (r=-0.38, p=0.003), left ventricular (LV) ejection fraction (r=-0.322, p=0.027) and a positive correlation with systolic blood pressure (r=0.379, p=0.003), pulse pressure (r=0.446, p=0.000) and LV hypertrophy (r=0.438, p=0.002). Kaplan-Meier analysis showed that all cause (log rank, p=0.0406) and CV mortality (log rank, p=0.006) were the cause for a significantly lower survival in patients with mean NT-proBNP levels >10.000 pg/mL.

Conclusions: Our results suggest that basal NT-proBNP plasma levels are a useful non-invasive marker of long term mortality in HD patients. Identifying HD patients with NT-proBNP>10.000 pg/ml, at increased risk of cardiac events, may improve their prognosis.

OP-03 - Hemodialysis, Apheresis, Artificial Organs

Comparison of Different Arterial Stiffness Parameters on Prediction of Mortality in Hemodialysis Patients

Meltem Seziş Demirci¹, Gülay Aşçı¹, Meral Kayıkçıoğlu², Mehmet Özkahya¹, Muhiittin Ertılav¹, Mehmet Tanrısev³, Sinan Erten⁴, Ercan Ok¹

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Aim: We prospectively investigated the impact of arterial stiffness markers on overall mortality.

Methods: In 668 patients, three arterial stiffness markers were measured by SphygmoCor Device (Atcor): Augmentation index (AI), radial-carotid pulse wave velocity (PWV-R) and femoral-carotid PWV (PWV-F). Demographical, clinical and biochemical parameters were recorded. Overall mortality was determined.

Results: Mean age was 59±13 yrs, HD duration 85±65 mo, female 43%, diabetes 31%. Mean systolic and diastolic blood pressures were 135±28 mmHg, 79±13 mmHg, respectively.

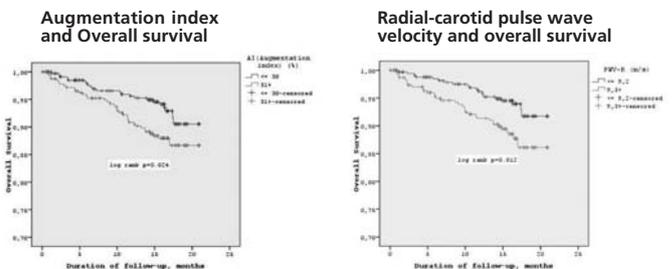
Mean AI, PWV-R and PWV-F were 29±10%, 9.3±1.7 and 10.4±3.4 m/s, respectively.

Sixty-two (9.3%) deaths occurred during a mean follow-up of 15±5 months. AI, PWV-R, and PWV-F were higher in the non-survivors than the survivors (31±11% vs.29±10%,p<0.05; 9.8±2.2 vs.9.2±1.7m/s,p<0.05; 12.1±3.9 vs. 10.2±3.3 m/s, p<0.001, respectively).

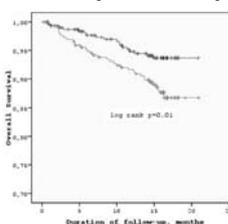
Mortality rates were higher in groups with AI>30% and 30% (11.6% and 6.4%,p=0.024, respectively), PWV-R>9.2 and 9.2m/s (11% and 5.9%, p=0.012, respectively) and PWV-F>9.9 and 9.9 (11.6% and 5.6%,p=0.01).

When AI, PWV-R, and PWV-F were separately added in a fully-adjusted model, all were found as independent predictors of mortality. Then we added all of these three stiffness parameters together into the model, only PWV-F remained predictive for all-cause mortality, besides cholesterol, hs-CRP, URR and albumin.

Conclusion: AI, PWV-R, and PWV-F are independently associated with all-cause mortality in HD patients; of these PWV-F is the strongest.



Femoral-carotid pulse wave velocity and mortality



Predictors of mortality

Independent variables	HR (95%CI)	p value
Model 1		
AI (1% increase)	1.03 (1.00 - 1.06)	p<0.05
PWV-R (1-m/s increase)	1.30 (1.12 - 1.51)	p<0.01
PWV-F (1-m/s increase)	1.20 (1.10 - 1.30)	p<0.01
Model 2		
PWV-F	1.20 (1.10 - 1.30)	p<0.01

Model 1: Adjusted with age, sex, DM, CVD, HD duration, SBP, DBP, BMI, serum calcium, phosphorus, CaXp product, PTH, albumin, Hs-CRP, cholesterol, triglyceride, bicarbonate, hemoglobin, URR.
 Model 2: Model 1 + AI + PWV-R

OP-04 - Hemodialysis, Apheresis, Artificial Organs

QT Dispersion Predicts Mortality and Correlates with Carotid Plaque Score but not with Coronary Artery Calcification Score in Hemodialysis Patients

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Background: QT dispersion (QTd) and coronary artery calcification scores (CACS) are well known predictors of cardiovascular mortality in hemodialysis (HD) patients. In this study, the relationships between CACS, carotid plaque score (CPS) and QTd were investigated.

Methods: Eighty-five HD patients (40 male; mean age: 45±12 years) were enrolled. CACS was determined by electron-beam computed tomography. QTd values were calculated by electrocardiograms. Patients were divided into three groups according to CACS; Group1 (CACS 0-10), Group2 (CACS 10-249) and Group3 (CACS >=250) and into two groups according to QTd values; Group1 (QTd<60 ms) and Group2 (QTd>60 ms).

Results: CACS significantly correlated with age (r=0.433, p=0.000), left ventricular mass index (r=0.367, p=0.001), diastolic blood pressure (r=-0.221, p=0.042) and CPS (r=0.425, p=0.001). QTd was significantly related to CPS (r=0.408, p=0.003). However, CACS was not associated with QTd. 5-year Kaplan-Meier survival analysis showed that survival of HD patients was associated with both CACS (p=0.01) and QTd (p=0.02). In cox-regression analysis, QTd, CACS and CPS were independently associated with mortality (p=0.03, p=0.03 and p=0.04, respectively).

Conclusion: QTd was mainly related to CPS but not CACS which means it was associated with atherosclerosis but not arterial calcification. Both CACS and QTd predicted the mortality in HD patients.

OP-05 - Hemodialysis, Apheresis, Artificial Organs

Comparison of Nutrition and Inflammation Markers in Hemodialysis Patients with and without Failed Renal Allografts

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Background: Chronic inflammation due to failed allograft and malnutrition may contribute to morbidity and mortality of the hemodialysis (HD) patients with failed allografts. We aimed to compare the nutritional markers and their relation with inflammation in patients on HD with and without previous kidney transplantation.

Methods: Sixty-nine patients with failed renal allografts (40 males), 98 never transplanted HD patients (58 males) and 21 healthy controls (13 males) were included in the study. Serum ghrelin, leptin, IGF-1, obestatin, IL-6 and TNF-alpha levels were measured.

Results: Serum ghrelin (1163±990 pg/mL vs 232±75 pg/mL, p<0.001) and obestatin (1.10±0.74 vs 0.64±0.49 ng/mL, p=0.01) levels of HD patients were significantly higher than healthy controls. When comparing patients with failed transplant and never transplanted patients, ghrelin (1609±952 vs 887±952 pg/mL, p<0.001), obestatin (1.31±0.79 vs 0.83±0.57 ng/mL, p<0.001) and IGF-1 (46.8±18.0 vs 42.0±17.6 ng/mL, p<0.001) levels were significantly higher in patients with failed renal allografts than never transplanted HD patients. HD patients had higher TNF-alpha and IL-6 levels than controls as expected. Patients with failed transplants were characterized by higher TNF-alpha (96.8±131.3 pg/mL vs 40.9±25.4 pg/mL; p<0.000) and IL-6 (83.9±150.9 pg/mL vs 14.3±14.1 pg/mL; p<0.000) as compared to never transplanted HD patients. Serum ghrelin levels were significantly correlated with obestatin (r=0.51, p<0.001), IGF-1 (r=0.235, p=0.004) and TNF-alpha (r=0.189, p=0.033) levels in HD patients.

Conclusions: Failed allografts may induce chronic inflammation in chronic HD patients. The reason for elevated ghrelin and IGF-1 levels in uraemic patients with failed transplants despite higher inflammation, remains to be explained.

OP-06 - Hemodialysis, Apheresis, Artificial Organs

Extracellular Fluid Volume and Mortality in Hemodialysis

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Aim: We investigated whether the amount of extracellular water (ECW) assessed by bioimpedance analysis (BIA) predicts mortality in hemodialysis (HD) patients.

Methods: In June 2006, ECW was measured by multifrequency BIA (Bodystat Quadscan 4000, British Isles) on a midweek interdialytic day and was corrected for body surface area (BSA) in 502 maintenance HD patients (mean age 55.9 ±13.5 yrs, HD duration 54 ±42 mo, female 41%, diabetes 35.8%). Demographical, clinical and laboratory data were recorded at the time of analysis. Overall and cardiovascular (CV) mortality were assessed during a mean follow-up of 22 ±17 months (1 to 36).

Results: Ninety-three deaths were observed during follow-up, 53 from CV diseases. ECW-BSA was significantly lower in survivors compared to non-survivors (9.63± 0.73 vs 9.90± 0.83 L/m, respectively; p=0.004). In multivariate Cox regression analysis, after adjusting for all variables, ECW-BSA was an independent predictor of both overall and CV mortality (RR: 1.48, p=0.007 and RR: 1.80, p=0.002; respectively) (table). Patients with ECW-BSA below 9.62 L/m² (median value) had a significantly better 3-year cumulative survival than patients with a ECW-BSA equal or higher than 9.62 L/m² (p=0.01) (figure).

Conclusion: High extracellular fluid volume is an independent predictor of both cardiovascular and overall mortality in HD patients.

Figure: Kaplan-Meier survival curves for ECW-BSA groups

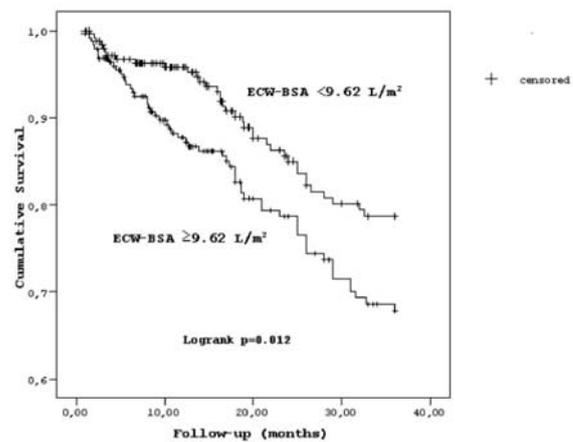


Table: Independent mortality predictors

Variables	Overall mortality		CV mortality	
	RR (95%CI)	p-value	RR (95%CI)	p-value
Age (yr)	1.05 (1.03-1.07)	0.0004	1.08 (1.047-1.11)	0.0002
Albumin (g/dl)	0.29 (0.16-0.53)	0.0004	0.35 (0.16-0.80)	0.012
Diabetes status	1.70 (1.12-2.55)	0.012	3.01 (1.69-5.35)	0.0001
ECW-BSA (L/m)	1.48 (1.11-1.97)	0.007	1.79 (1.23-2.61)	0.002

Variables in model: age, gender, diabetes, cardiovascular disease history, HD duration, body mass index, serum albumin, creatinine, high sensitive c-reactive protein, cholesterol and phosphorus, urea reduction rate, systolic and diastolic blood pressure, interdialytic weight gain

OP-07 - Peritoneal Dialysis

Peritoneal Ultrafiltration for the Treatment of Severe Refractory Congestive Heart Failure at Geriatric Patients

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Introduction: Congestive heart failure (CHF) is a major and frequent problem in patients especially with age > 65, also one of the leading causes of hospitalization due to decompensation in this patient group. When conventional medical therapies became ineffective, other treatment strategies such as peritoneal ultrafiltration (PUF) should be considered.

The study aim is to investigate the effect of PUF on a series of patients in geriatric age (> 65), CHF (NHYC class 3-4), frequently hospitalized with normal renal function.

Subjects and Methods: We retrospectively analyzed the outcomes of 6 patients (5 male-1 female mean age was 72,8±/3,9); all with dilated cardiac myopathy, 4 had NHYC class 4, two had class 3 CHF, all were resistant to conventional medical therapies.

Results: In all patients PUF was tolerated well, no episodes of peritonitis were observed and an average of 891,6±/108,3ml daily ultrafiltration was provided. Patients baseline and 6th month results were weight; 80±/10,3 kg/ 75,5±/11,3kg, plasma Na; 128±/4,3 mg/dl/ 138,6±/3,8 mg/dl, ejection fraction: 28,2±/4,5% / 28,8±/6,1 %, pulmonary arterial pressure: 48,2±/2,1 mmHg/ 40,6±/5,3 mmHg. GFR:49.4 ±/8.2 ml/min/ 51,6±/17.6 ml/min as MDRD. Before PUF patients had 19.3±/9.7 days/year hospitalization and during 24 months (12- 36month) follow up period no hospitalization was recorded.

Discussion: In this retrospective observational study, we found that in geriatric patients with refractory and advanced CHF, PUF, seem to be useful in reducing hospitalization rate and increasing the quality of life.

Conclusion: Peritoneal ultrafiltration provides a treatment choice for geriatric patients with advanced CHF, refractory to medical therapies.

OP-08 - Peritoneal Dialysis

Clinical Outcome of Diabetic Peritoneal Dialysis Patients: One Center Experience

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Diabetic peritoneal dialysis (PD) patients was reported to have increased morbidity and mortality rates. The purpose of this study was to evaluate the clinical outcome and to identify predictors of mortality in our diabetic PD patients. Sixty-one patients (30F, mean follow-up 29,6±20, 3months, mean age 57±13years) were started PD treatment between 2001-2009 and data were evaluated retrospectively.

PD treatment were withdrawn in 48 of them (group1:drop-out) (26F, mean age 59±13 years); remaining 13 patients (4F, mean age50±10years) were still under follow-up (group2: treatment). The two groups were compared in the table. The causes of drop-out were death (54%), transfer to HD (33%), and other causes (13%). The most frequent causes of death were cardiac events (57,7%), peritonitis and/or sepsis (38,4%). Whereas transfer to HD were due to peritonitis (50%) and to insufficient PD (50%).

In group I, 18 of 74 peritonitis episodes were culture negative. The most frequent causes of peritonitis were methicillin sensitive staph. aureus in 27 (36%) attacks, and methicillin resistant staph. aureus in 15 (20%) attacks.

We found positive correlation between mortality and age (p:0.008, r:0,345) and negative correlation between mortality and follow-up time, pretreatment serum albumin, calcium and PTH levels, systolic and diastolic blood pressures in the last follow-up (p:0.005, 0.03, 0.025, 0.035, 0.015, 0.03 and r:-0.36, -0.28, -0.30, -0.29, -0.33, -0.29, respectively).

In conclusion: Cardiovascular events and peritonitis were the most important causes of drop-out in diabetic PD patients. The presence of hypoparathyroidemia, hypocalcemia and hypoalbuminemia were associated with mortality.

Demographic, laboratory parameters of patients

	Group1 (n:48)	Group2 (n:13)	p
Following time (month)	25,1±18	45,8±20,7	0,004
Cardiothorasic index (%)	49±0,4	49±0,4	0,84
Pretreatment urine (ml/day)	456±476	515±790	0,80
Pretreatment systolic BP (mmHg)	127±26	116±10	0,03
Pretreatment diastolic BP (mmHg)	78±13	76±10	0,54
Last systolic BP (mmHg)	106±28	117±24	0,168
Last diastolic BP (mmHg)	66±13	73±8	0,021
Pretreatment Albumin (gr/dl)	3,4±0,5	3,6±0,3	0,04
Peritonits incidence (month)	14,7±10	34±21	0,006

OP-09 - Peritoneal Dialysis

Interleukin-6 is a Strong and Independent Predictor of the Extent and Severity of Vascular Atherosclerotic Lesions in Peritoneal Dialysis Patients

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Objective: To investigate the associations between inflammatory markers (CRP, TNF-α, IL-6) and vascular cell adhesion molecules (ICAM-1, VCAM-1) with atherosclerosis in peritoneal dialysis (PD) patients.

Methods: We included 67 PD patients (31 men, age 64.6 ±15.2 years). Atherosclerotic vascular lesions were assessed by measuring intima-media thickness and plaque score in the carotid (cIMT and cPS respectively) and femoral (fIMT and fPS respectively) arteries. CRP levels were determined by nephelometry and serum cytokine and adhesion molecule levels by ELISA. Correlations of the above inflammatory markers and classic risk factors with the ultrasonographic parameters were tested by multivariate stepwise regression analyses.

Findings: cIMT correlated independently with age (p <0.0001), history of CVD (p=0.036), HDL-cholesterol (p=0.030), ICAM-1 (p=0.015) and IL-6 levels (p=0.004). Age (p = 0.004) and IL-6 (p = 0.003) correlated independently with cPS values. Age (p <0.000), BMI (p=0.023), smoking (p=0.023) and IL-6 levels (p =0.004) were independent predictors of fIMT, whereas fPS correlated independently with age, IL-6 and smoking (p=0.001, p=0.046 and p=0.015, respectively).

Conclusions: In PD patients, IL-6 is a strong and independent predictor of early as well advanced atherosclerotic lesions, in both examined arterial sites and possibly a useful surrogate marker of cardiovascular risk.

OP-10 - Peritoneal Dialysis**Evaluation of Anuric versus Non-Anuric 127 Peritoneal Dialysis Patients**

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Residual kidney function is important for patient and technique survival in peritoneal dialysis (PD) patients. In this study, 127 PD patients have been evaluated retrospectively depending on urine output at the beginning of the PD therapy.

Anuric patients (urine-output<100ml/24hours) and non-anuric patients (urine-output>100ml/24 hours) were compared according to demographic, clinical and biochemical parameters, and peritonitis incidence.

Forty-one patients were anuric (31 female, mean-age 41,2±13 yrs, mean follow-up period 57,2±32,2 months) at the beginning of dialysis. Thirty of these patients received CAPD and 11 APD. Twenty-six of 41 anuric patients had hemodialysis therapy before PD.

Eighty-six patients were non-anuric (40 female, mean-age 41,9±13,7 yrs, mean follow-up period 45,09±28,2 months). In this group 58 patients received CAPD and 28 APD. Forty of 86 patients had received hemodialysis therapy. Thirty-eight patients (26 CAPD and 12 APD) became anuric in the following 24,7±21,5 months.

No differences were noted regarding age, prior hemodialysis duration, presence of diabetes, UF volumes, albumin, CRP, Hb, Ca, P, PTH, and KtV levels. Significant differences were noted regarding follow-up periods, systolic and diastolic blood pressure at the beginning, ferritin levels and gender, between the two groups. Peritonitis rate was one episode per 28,9 vs. 32,9 patient-months in anuric and non-anuric groups, respectively. However there was no significant difference regarding peritonitis rate between the two groups.

In conclusion, it seems that patients who had tight blood pressure control become more anuric. Even though residual renal function is known to improve quality of life and complication rates in PD patients, no significant differences were found regarding peritonitis rates between anuric and non-anuric patients in our study.

Comparison of anuric and non-anuric peritoneal dialysis patients

	Anuric patients (n:41)	Non-anuric patients (n:86)	p
Age	41,2±13,7	41,9±13,7	n.s.
Gender (F/M)	31/10	40/46	<0.05
Mean follow up period (month)	57,2±32,2	45,09±28,2	<0.05
HD duration (month)	26,4±28,4	10,5±15,9	n.s.
UF volume(ml)	1089±404,5	1036,6±453,6	n.s.
Albumin(g/dl)	3,89±0,08	3,74±0,5	n.s.
CRP	10,1±13,9	6,7 ±9,4	n.s.
Hb (g/dl)	10,8±1,8	10,9±1,5	n.s.
Ca (mg/dl)	9,4 ±1,1	9,0±0,9	n.s.
P (mg/dl)	5,0±1,5	5,2±1,4	n.s.
PTH (pg/ml)	336±273	345±339	n.s.
Ferritin (ng/ml)	635±484	318±392	<0.05
Systolic BP (mmHg)	108,0±24,3	120,5±29,7	<0.05
Diastolic BP(mmHg)	69,8±13,7	76,5±17,2	<0.05
Peritonitis rate	1/28,9	1/32,8	n.s.

OP-11 - Peritoneal Dialysis**Comparison of Aminoacids Containing Dialysate, Oral Essential Aminoacids and Dialysate Plus Oral Aminoacids Treatments for Improvement of Nutritional Status in Peritoneal Dialysis Patients**

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Introduction: Malnutrition frequently occurs in peritoneal dialysis (PD) patients. Albumin is an important marker of nutritional status in patients under peritoneal dialysis. Aminoacid containing dialysate (ACD) and oral essential aminoacids (EAA) generally are used for treatment of malnutrition. In the present study, we investigated effect of different strategies of aminoacids replacement therapies for improvement of nutritional status in patients under peritoneal dialysis treatment.

Patients/Methods: 48 PD patients with albumin levels ≤3,5 g/dl enrolled into the study. 12 were in ACD group, 24 were in oral EAA group and 12 were in ACD plus oral EAA group. All data were recorded retrospectively on the based of beginning values, 3rd month values and 6th month values.

Results: The age, gender, BMI, albumin levels and diabetes mellitus ratios were similar between third groups (p>0,05). Improvement of albumin levels was observed in all aminoacids replacement groups. Amount of elevation were revealed in ACD, oral EAA and ACD plus oral EAA groups; 0.33 g/dl, 0.44 g/dl, 0.59 g/dl (respectively) at the end of third month (p>0,05). At the end of sixth month amount of elevation were 0.50 g/dl, 0.49 g/dl and 0.46 g/dl (respectively) (p>0,05).

Conclusion: All strategies were successful for improvement of nutritional status. No differences observed between oral EAA and ACD or oral EAA plus ACD groups. Cost-effectiveness and conveniences of patients are important in the choice of treatment models.

OP-12 - Peritoneal Dialysis

Aldosterone Inhibition may Reverse Encapsulated Peritoneal Sclerosis

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Introduction: Increased peritoneal inflammation and proinflammatory cytokine activity underlies the encapsulated peritoneal sclerosis (EPS).

The inhibition of aldosterone, a well-known old vasculotoxic, inflammatory and fibrotic mediator, with Aldactone® (ALDA) was investigated in our rat EPS model.

Material-Methods: Forty non-uremic Wistar albino rats were divided into four groups as follow:

Control group: 2 ml isotonic saline intra peritoneally (IP) daily, 3 weeks (w), CG group: Daily IP 2 ml/200 g injection of chlorhexidine gluconate (0.1%) and ethanol (15%) dissolved in saline, 3 w,

Resting group:CG+additional 3w without any treatment, total 6 w, ALDA group: CG+additional 3w 100 mg/kg daily ALDA in drinking water, total 6w.

At the end of the study, one hour PET, morphological and functional parameters of peritoneum with dialysate cytokine and osteopontin (mesenchymal transition marker) levels were measured.

Results: The results are given in the table.

Conclusion: ALDA renewed ultrafiltration (UF) failure, D1/D0 glucose levels and dialysate protein loss (Dx prot). Peritoneal thickness, WBC count and inflammation of peritoneum were also decreased with ALDA treatment. ALDA improved over-expression of dialysate TGF-β1, MCP-1, VEGF and osteopontin levels as compared to resting. ALDA, beyond its cardiovascular benefits, may preserve membrane viability in long term peritoneal dialysis patients via inhibition of dialysate cytokine inhibition.

Peritoneal functional and structural parameters with dialysate proinflammatory cytokine and osteopontin levels

	Control n=10	CG n=10	Resting n=10	ALDA n=10
UF, mL	7.3±0.3	0.3±0.8a	3.1±0.8ab	6.1±0.8bc
D1/D0 glucose	0.4±0.0	0.17±0.0a	0.3±0.0b	0.32±0.0ab
Dx prot g/L	0.6±0.0	3.23±0.3a	2.22±0.3ab	1.55±0.3a
Peritoneal thickness, µm	11.8±2.2	160.6±7.3a	120.7±9.8ab	116.5±13.9ab
WBC, mm ³	739±47	1025±125	727±99	175±35abc
Inflammation	0.0±0.0	1.1±0.1a	1.5±0.1ab	1.4±0.2a
Fibrosis	0.1±0.0	1.2±0.1a	2.0±0.2ab	2.1±0.2ab
TGF-β1 pg/mL	4230±103	7133±539a	6870±852a	4451±159bc
MCP-1 pg/mL	34.3±3.2	443.7±28.5a	223.9±82.3ab	212.6±34.2ab
VEGF pg/mL	22.0±2.4	62.6±2.4a	51.0±4.8ab	48.6±3.9ab
Osteopontin pg/mL	352.7±23.0	619.0±34.7a	501.5±67.0	392.0±41.4b

a, p<0.05 group vs control; b, group vs CG; c, group vs Rest.

TGF-β1, transforming growth factor-beta-1; MCP-1, monocyte chemoattractant protein-1; VEGF, vascular endothelial growth factor; UF, ultrafiltration; Dx prot, dialysate protein; WBC, dialysate white blood cell count.

OP-13 - Epidemiology and Basic Science

DKD in Patients with Diabetes Type 2 in Ukraine

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To ascertain the prevalence of DKD and effectiveness of ACEI+ in DKD among patients with DM 2 and hypertension in Ukraine the trial "SCYTHIAN" was performed. The trial has been planned as prospective randomized open one. 2008-2009 phase was epidemiological trial with detecting the prevalence of DKD and 2009-2010 is going to establish the effectiveness of ACEI+ therapy. Criteria of inclusion were: age> 40 years, DM 2, hypertension I-III. Exclusion criteria: DM 1, hypertension III, symptomatic hypertension and heavy accompanying diseases. 1672 pts have taken part at this trial.

The data obtained show that BP>=140 mm hg was observed at 94 % of pts, BP>=130 mm hg - 95,5%. 2 stage BP is documented at 41 % pts. Albuminuria has been revealed at 71 % of patients, 76 % - abnormal eGFR: decreased eGFR - 61 %, hyperfiltration - 15%. At 360 pts (22 %) were documented simultaneous decrease eGFR and albuminuria.

Thus albuminuria could be considered as a late marker of DKD. ACEIs/ARBs in monotherapy are shown as ineffective to treat hypertension with decreased eGFR and albuminuria.

OP-14 - Pediatric Nephrology

Genetic and Non-Genetic Type of Steroid-Resistant Nephrotic Syndrome and Cyclosporine A Response

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The management guidelines of steroid resistant nephrotic syndrome (SRNS) is not uniform due to different clinical, laboratory and pathologic features of the disease. The long usage cyclosporine A (CsA) with low dose prednisolone was reported to be successful in studies. To evaluate the CsA response in genetic and non-genetic SRNS is aimed.

Study included 27 SRNS children (15 boys and 12 girls) treated with CsA in 2000-2008. All patients were evaluated with biopsy and NPHS2 gene analysis when identified as SRNS. The patients with negative NPHS2 gene mutations were evaluated with all podocyte genes and for all gene negative mutation patients named as non-genetic NS. The response to CsA were identified as no (NR), partial (PR) and complete (CR) response with proteinuria results of >40, 4-40 and <4 mg/m²/h, respectively.

Seven patients (25.9%) had NPHS2 gene mutation. ESRD was detected in 85.7% of NPHS2 mutation positive patients while 50% of the NPHS2 mutation negative patients. All of the patients had prescribed CyC in genetic group, only one of them showed PR. 3 patients in non-genetic group showed CR with CyC, but needed CsA for proteinuric attacks.

50% of the patients displayed remission with CsA in non-genetic group. Five patients with NR to CyC had CR with CsA. In genetic group, all patients had FSGS features, while DMP, MCD and IgM nephropathy were also detected with FSGS in non-genetic group.

It is firstly reported the CsA effect both on genetic and non-genetic NS in this study. The treatment of children with idiopathic, non-genetic, SRNS with Prednisolon plus CsA in a long period provides 50% remission rate. It is essential to evaluate genetic tests before giving immunosuppressive drugs.

OP-15 - Clinical Nephrology**Low Dose Multitarget Therapy in Older Patients with ANCA Vasculitis**

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Objective: To assess the safety and efficacy of low-dose conventional immunosuppression in combination with the mAb Rituximab.

Methods: 12 patients, 7 female and 5 male, mean age 69±10 years, with newly diagnosed ANCA vasculitis and severe renal involvement were included. Mean baseline creatinine clearance was 17±9 ml/min/1,73m² and mean proteinuria 1,9±1,8g/24 hr.

All had focal and segmental necrotizing GN with crescents on renal biopsy. Four patients (4/12) were dialysis-dependent at diagnosis and 6/12 also had pulmonary involvement. 11/12 patients were pANCA positive and one had cANCA. As induction, all patients received one single dose of 375/m² of Rituximab and iv pulses of 300-750mg/m² of CYC and oral methylprednisolone for 6 months (mean cumulative CYC dose 4,2±1,8g). 9/12 patients also underwent 6-8 courses of immunoadsorption. As maintenance, either they continued on iv CYC, bi- and thrimonthly (2/12) or on mycophenolate acid (10/12) with low-dose steroids. Mean follow up:24±12 months.

Results: After 3 months, only one patient remained on haemodialysis. Mean creatinine clearance was 28±17ml/min and mean proteinuria 1 ± 0,95g/24hr. At the end of follow up, 10/12 patients still remain off-dialysis with a mean creatinine clearance 30±10ml/min and mean proteinuria 0,91± 0,96g/24hr. Two patients died during follow up. In all patients, B-cells were rapidly depleted and depletion was sustained for at least 12 months. Two patients received repeated doses of Rituximab after the reappearance of B-cells. Therapy was well tolerated. Only one HSV infection occurred.

Conclusion: In older patients with ANCA vasculitis and severe renal involvement, multitarget therapy allows reduction of toxic immunosuppression with excellent results.

OP-16 - Hemodialysis, Apheresis, Artificial Organs**Alpha-Galactosidase A Deficiency in Turkish Male Hemodialysis Patients**

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Background: Fabry disease is an X-linked lysosomal storage disorder due to the deficient activity of alpha-galactosidase A leading to renal insufficiency in males and occasionally in females. The prevalence of Fabry disease in dialysis registry programmes reported from different countries is highly variable. The aim of present study was to identify the Fabry patients by detection of alpha-galactosidase A deficiency in a Turkish male hemodialysis population.

Methods: Activity of plasma alpha-galactosidase A was measured in a group of 808 adult male Turkish hemodialysis patients using previously described fluorimetric methods. Patients with low alpha-galactosidase A activity were evaluated clinically and their alpha-galactosidase A mutations were determined.

Results: Plasma alpha-galactosidase A activity among male population under hemodialysis was 7.88±5.18 micromol/hour/L (0.40-55.72), significantly lower comparing to the controls (p=0.01). Of 808 studied patients two new Fabry disease patients were identified (alpha-galactosidase A activity 0 micromol/hour/L). Both of them were previously followed-up as diabetes mellitus type 2.

Conclusions: These findings provide for the first time a data about prevalence of alpha-galactosidase A deficiency in a Turkish male hemodialysis population: 0.24 % (95 CI 0 - 1.1 %). Screening of male diabetes mellitus type 2 hemodialysis patients might be clinically valuable objective.

OP-17

This abstract has been withdrawn by the authors.

OP-18 - Clinical Nephrology**Correlation between Clinical and Laboratory Parameters and Tubular and Interstitial Changes in Patients with Chronic Glomerulonephritis**

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The aim of the study was to evaluate the influence of clinical and laboratory parameters on tubular and interstitial damages in patients with chronic glomerulonephritis. The clinical and laboratory data of 72 patients that were hospitalized in our clinic were compared with the changes in tubules and interstitium from kidney biopsy. The incidence of tubular and interstitial changes in chronic glomerulonephritis was higher and they missed only at 9,72% of the patients. Only with tubular dystrophy were 20,83% from patients, mostly with mesangialproliferative glomerulonephritis, but also with minimal change disease and membranous nephropathy. There were correlations between tubular and interstitial changes and blood pressure, serum creatinine, creatinine clearance and uric acid in the serum. Creatinine clearance correlated with interstitial infiltrates, interstitial fibrosis and tubular atrophy (resp. r=+0,384, p<0,05; r=+0,354, p<0,05 и r=+0,364, p<0,05). Systolic blood pressure correlated with interstitial fibrosis (r=+0,438, p<0,05), while diastolic-with interstitial infiltrates (r=+0,312, p<0,05). Interstitial fibrosis was more often in patients with proteinuria > 2g/d than in those with <2g/d (resp. 31,9% and 18,1%, p<0,01).

We conclude that tubular and interstitial changes are with high incidence in chronic glomerulonephritis. That changes correlated with hypertension, uric acid, proteinuria, serum creatinine and creatinine clearance.

OP-19 - Clinical Nephrology**Risk Factors for Renal Biopsy Complications**

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The aim of this study was to examine the rate of post-biopsy complications. We studied 204 patients - 106 F and 98 M. 40 were with renal failure. The biopsies in 107 pts were done with automated needle 16G or 18G, in 97 - with Tru cut needle, 16G. The post biopsy complications were visualized by ultrasound examination. Minor complications occurred in 16% of all biopsies. The post biopsy hematoma with Tru- cut needle was significantly higher, p< 0,001. The mean size of hematoma by Tru- cut needle was bigger then those made by automated needle (43,5±10,2 mm v.s. 25,6±8,2 mm). A multivariate analysis was performed to determine which variable was predictive of a complication. Biopsies in patients with a serum creatinine >400µmol/l were 2.0 times more likely to have a complication after renal biopsy (odds ratio, 2.0; 95% confidence interval, 1.3 to 4.1; P < 0.005). The incidence of postbiopsy hematoma was greater in group I, p<0.01. The number of hematoma was significantly increased when 16 G needle and a Tru-cut needle was used. Despite the possible post-biopsy complications renal biopsy remains a routine procedure in nephrology necessary for the process of diagnosis and therapy.

OP-20 - Acute Renal Failure**Severity and Outcome of Acute Kidney Injury According to RIFLE Criteria in the Intensive Care Unit**

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Objective: Aim of this study was to evaluate severity and outcome in patients with acute kidney injury (AKI) in the intensive care unit (ICU) based on the RIFLE criteria.

Methods: Patients with AKI admitted in medical and surgical ICU between January 2005 and December 2007 were reviewed retrospectively. The first three criteria of RIFLE was applied. Patients on chronic dialysis before admission to the ICU were excluded. Demographic, biochemical, clinical, APACHE II score and outcome data, were studied and compared in the three groups.

Results: 76 patients (32F/44M), mean age 55,1±18,75 were studied. 6% of patients were on risk class, 19% injury, 73% failure. The failure group showed higher APACHE II score compared to risk (24,6±7,6 Vs 28,12±6,4 p=0,018). The overall in-hospital mortality was 52,6% with the highest in failure group 62%, injury 26% and risk 20%, with a statistical significance (p=0,015). Renal replacement therapy was required in 32% patients. Four patients on the failure group continued to be dialysis dependent at the end of three months.
Conclusions: AKI stratification based on RIFLE criteria correlated with APACHE II scores. In this study the RIFLE criteria correlate well with the outcome.

OP-21 - Acute Renal Failure**Epidemiology of Infection in Critically ill Patients with Sepsis/SIRS and Its Influence on Acute Kidney Injury**

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Sepsis/SIRS (Systemic Inflammatory Response Syndrome) is the common reason of acute kidney injury (AKI) in critically ill patients which unfavorably determines the outcome. The present study aimed to investigate the influence of infection for the development of AKI.

In an intensive care unit of a tertiary care university hospital, 109 patients (mean age: 51,4) with sepsis/ SIRS were included into this study. Data were collected from 2006-2008.

Totally 89 (81,7%) patients were septic. Gram positive bacteria were predominantly isolated from blood cultures (58,8%) and cultures other than blood (38,4%). Patients with infection had prolonged length of stay (mean: 26±34,8 day) (p<0,001). Gram negative bacteria were mostly isolated from immunosuppressive patients (p=0,02). The culture positive patients had higher risk of renal dysfunction (p=0,03). The ratio of AKI was same (54%) both in SIRS and sepsis, but it wasn't significant. AKI was associated with age, diabetes mellitus (DM), SOFA (Sepsis-related organ failure assesment) score (all p<0,05). Mortality rate was higher in patients with AKI (p=0,007). Failure of kidney function developed 15,7% and 12,8% in patients with sepsis and SIRS, respectively. SIRS as well as sepsis, DM and SOFA score are crucial informations for AKI that also associated with worse outcome.

OP-22 - Epidemiology and Basic Science**Upper UEM Associated with & without BEN - Possible Dissociation of AA Toxic & Mutagenic Effects in Endemic Regions**

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Balkan endemic nephropathy (BEN) is regarded as aristolochic acid (AA)-I nephropathy strongly associated with upper uroepithelial malignancy (UUEM). AA-I induces apoptosis by caspase (-3,-7) activation, while metabolites ALs adducts acquire mutagenic potential. We investigated dissociation of toxic and mutagenic AA effects by immuno-histochemical analysis of PARPp89 that reflected caspase activity in kidney tissue with (n=19) and without BEN (n=11) in patients with BEN family history and undergone nephrectomy due to UUEM. Kidney scores 0-3 of arteriolar sclerosis (aas), arteriolar hyalynosis (ah), glomerulosclerosis (gs), tubular atrophy (ta), interstitial fibrosis (if), infiltrates (MNC) were calculated. Patients with BEN(63.9±5.9 yrs) and without BEN(59.7±10.9 yrs) increased s. creatinine (median 123 vs. 103µmol/l; p=ns) for >25 years of living in affected households; 10 BEN and 7 without BEN had additional pyelonephritis (p=ns). Greater aas (p=0.018), ah(p=0.000), ta (p=0.031), if (p=0.017) were evidenced in BEN. Ta and if correlated in BEN (p=0.000) and without BEN patents (p=0.001); only noBEN expressed PARPp89 (+) that inversely correlated with ta(-); p=0.031. Young BEN patients developed more severe ah(p=0.007), and ah greater score had patients with less ta (p=0.021) indicating ah was early change of BEN. In BEN, kidney aas correlated with tumor TUNEL+ cells(p=0.028); and kidney PARPp89 (+) with tumor apoptosis score (TUNEL+PARPp89+cells); p=0.041.

Conclusion: Apoptosis is greatly involved in BEN and associated UUEM developing. Limited role of kidney PARPp89+ cells in solely developed UUEM in affected endemic households suggests inferior toxic effects.

OP-23 - Renal Transplantation**De Novo Immunosuppression with Everolimus and Cyclosporine A in Renal Transplantation**

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Background: The chronic toxicity of CsA on the kidney is a known problem. The recent use of new immunosuppressive agents has strengthened the case for minimizing the use of CsA. A protocol combining everolimus with reduced dose of CsA was tried.

Material-Methods: The period Oct 2004 - Nov 2007, thirty three patients (18 men, 15 women) with mean age 40 years received de novo immunosuppression everolimus, cyclosporine A (CsA), steroids and basiliximab. Twenty transplants were from living related donor (LRD) and 13 from cadaveric donor (CD). Acute rejection episodes, delayed graft function (DGF) were recorded. Drop out of the protocol, graft and patient survival were calculated.

Results: Patient survival was 96.97% at four years. Graft survival from LRD was 90.00% and 80.00% at one and four years respectively. Graft survival from CD was 76.92% and 61.54% at one and four years respectively. The drop out of the protocol was 63.63% at the end of follow up (10.9.09). DGF was recorded in 30.76% and 10% of LRD and CD transplants respectively and the frequency of rejection episodes was 27.27%.

Conclusions: The combination everolimus-CsA is characterized by high frequency of acute rejection episodes, high drop out and low graft survival.

OP-24 - Renal Transplantation**The Use of Marginal Donors can be an Alternative Strategy to Increase Kidney Transplantation?**

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Introduction: Aim of this study was to reveal the short and long term graft-patient survival rates, graft functions and the risk factors influencing outcome of kidney recipients with extended criteria donor (ECD) as an alternative strategy.

Methods: A total of 17 kidney transplantations from 11 extended criteria donor were performed among deceased donor kidney transplantations between January 2006 and December 2008. The average age of donors was 58,1±7,9 years old and ECD criteria were as follows: 35% age, 29,5% CVO+HT+Cr, 23,5% CVO+Cr, 12% CVO+HT. Mean cold ischemia time was 11,8±6 hours and serum creatinine level was 2,4±1,4mg/dl.

Results: Average age of recipient was 48,7±10,5 years old (M/F:11/6). Patient follow up was 15,6±7,9 months, and only one patient died (secondary to infection) and graft loss occurred. Kaplan-Meier estimated patient and graft survival rates were 94,1% at 2 years. 35,3 % of cases had acute tubular necrosis, 17,6 % had delayed graft function. 41,2 % required hemodialysis after transplantation. The average creatinine levels showed a tendency to decrease over time as 2,8 mg/dl, 1,75mg/dl, 1,27 mg/dl at 1st week, and months 1, 12 respectively. At the end of the follow up period 94,1% of patients had good graft function (GFR=50±15 ml/min). There was significant correlation between delayed graft function and criteria of donor risk (p<0,05). No significant correlation between short term problems such as DGF/ATN and cold ischemia time, donor Cr, donor age, mismatch status was determined.

Conclusion: Our results revealed that majority of recipients with extended criteria donor was prone to have short term problems as acute tubular necrosis and delayed graft function, however had better long term function and survival. The use of donor with EDC may provide acceptable strategy in order to increase the number of kidney transplantation.

OP-25 - Renal Transplantation**Serum Fetuin A Concentration in Chronic Kidney Disease, Hemodialysis and Renal Transplant Patients**

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Fetuin-A, represent an inhibitor of vascular calcification (VC) but also is a negative acute phase reactant.

Objective of the present study was to determine serum fetuin-A concentration (FA) in chronic kidney disease (CKD), hemodialysis (HD) and renal transplant (Tx) patients and to evaluate the its relations with VC and patients outcome. The study involved: 48 CKD (aged 38.4 years, CKD duration 2.5 years), 130 HD (aged 55.1 years, HD duration 8.9 years) and 49 Tx (aged 41.9, Tx duration 8.1 years) patients.

Methods: VC score was evaluated by cardiac multi-slice CT.

Findings: FA was significantly lower (0.185±0.058 vs 0.397±0.133 and 0.462±0.110 g/L) but CRP was significantly higher in HD than in Tx and CKD patients. In CKD and Tx patients the multivariate regression analysis indicated that CKD and/or HD duration was the only determinants of VC score. In HD patients, during the 3 years follow-up period the Cox survival model wasn't selected FA as a predictor of patients mortality.

Conclusion: FA strongly associated with chronic inflammation and is the lowest in HD patients. The formation of VC all along with kidney disease duration depends of it span and the role of VC inhibitors must be determined in the longitudinal studies.

OP-26 - Renal Transplantation**Hypersensitized Kidney Transplant Recipients: A Single Center Case Control Study**

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The most difficult patient group for renal transplantation is that of the hypersensitized patients i.e. recipients with panel reactive antibodies (PRA's)>70%. For these patients, since 2004, the Greek Transplant Organization has given selection priority for every available donor. The selection is based on the method of the "acceptable mismatch".

Patients: In our unit, 20 hypersensitized patients, 11 female and 9 male, have been transplanted. Class I PRA's were 70% ± 27% and class II 55% ± 30%. Mean recipient age was 50,1± 8,4 and mean donor age 54,6 ± 14,7 years. Delayed graft function occurred in 12/20 patients with mean duration 13,2 ± 9,3 days.

The immunosuppressive regimen was: Tacrolimus, 0,05mg/Kg (target trough levels 4-7ng/ml), Rapamune 2-3mg (target trough levels 6-9ng/ml), methylprednisolone 20-40mg/d tapered to 4mg/ημ at 3months and as induction the anti-IL2 Daclizumab (16/20 patients). Four patients received mycophenolate mofetil 1,5-2g/d instead of Rapamune.

Results: Mean follow up was 15 ± 9,4 months. Mean serum creatinine at month one was 2,3 ± 2,1mg/dl, at six months 1,6 ± 0,9mg/dl and at one year 1,4± 0,6mg/dl. There was one patient death with functioning graft 9 months after transplantation and no graft loss. Three episodes of acute rejection and 5 infection episodes requiring hospitalization were successfully treated.

There was no difference compared to the control group (n=20 patients matched for age, gender, donor and transplantation time).

Conclusion: The excellent results of hypersensitized patients transplanted with the method of "acceptable mismatch" justifies their selection priority completely.

OP-27 - Renal Transplantation**Risk Factors for Chronic Allograft Nephropathy after Renal Transplantation: A Protocol Biopsy Study**

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Objective: To evaluate the histological evidence of chronic allograft nephropathy (CAN) in protocol biopsies, and risk factors for CAN.

Methods: We carried out 40 paired protocol biopsies in 40 patients at 1 and 6 months after renal transplantation. Patients without evidence of CAN at 1, and progression of CAN at 6-month biopsy (N= 12, non-CAN group), and those with or without evidence at 1, and with progression at 6-month biopsy (N=28, CAN group), were compared.

Findings: The groups differed significantly in the mean cold ischemic time (CIT) and time on dialysis (3.2±1.1 vs. 4.0±1.3 hours, p<0.05; 8.0±6.9 vs. 34.7±40.9 months, p<0.01) for non-CAN vs. CAN group, respectively. The CAN group had a significantly higher proportion of delayed graft function (DGF) and urinary tract infections (UTI) [39% vs. 8%, p<0.05; 79% vs. 25%, p<0.05], and a higher percentage of acute rejection (AR), borderline changes (BC) and subclinical rejection (SR) at 1 month biopsies (89% vs. 58%, p<0.01).

Conclusion: Risk factors for development and progression of CAN in our study were: CIT, DGF, UTI, AR, SR and BC found in 1-month biopsy. Regular renal transplant biopsies may be useful to ameliorate the progression of CAN.

OP-28 - Renal Transplantation

Long-Term Outcome of Kidney Transplant Patients with Hepatitis C Infection; A Single Center Experience

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Introduction: Aim of this study was to assess the long term outcome of kidney transplant patients with HCV infection in our center.

Method: In this study, we analyzed retrospectively 1692 kidney transplantation (KTx) performed between Jan 1999 and Dec 2009, of whom 92 (5,4%) patients (36,8±10,2 years old, 57,6 % male) had HCV Ab (+) before transplantation. HCV Ab(+) patients were assessed retrospectively in terms of liver function, graft function, survival rates, and the related risk factors.

Results: Mean follow up was 47,2 ±31 months. Seroprevalence of HCV infection was 5,4% of all KTx patients. 29,3% of HCVAb(+) patients had HCV RNA(+), 25.6% had ALT elevation, none of the patients developed hepatic cirrhosis during the follow up period. There was significant inverse correlation between albumin levels and graft function, proteinuria, mortality. Kaplan-Meier estimated patient survival rates were 98,9% at first year, 93% at 5th year, graft survival rates are; 96,6% at first year and 86,9% at 5th year. These rates were comparable with HCV Ab(-) patients. Albumin level was found to be an important factor influencing patient survival rate at Cox regression analysis.

Conclusion: Our results demonstrated that patient and graft survivals were not adversely affected by HCV infection in kidney transplant patients at 5 years and serum albumin level was an important determinant for survivals. KTx can be accepted as a reasonable and safe renal replacement therapy in ESRD patients with HCV infection.

OP-29 - Hemodialysis, Apheresis, Artificial Organs

Metabolic Bone Disease with Patients on HD (Hemodialysis) – From Guidelines to Clinical Practice

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We analyzed the metabolic status and bone tissue changes of 84 patients (41 female and 43 male).

The distribution of iPTH levels was as follows:

- <70 pg/ml 11.0%
- 71><300 33.0%
- 301><500 15.5%
- 501><1000 19.9%
- 1001><2000 3,5%

Patients were treated with bicarbonate HD (24% with hemodiafiltration) with calibrated dialysis liquid calcium and dietary regimes. Non-calcium phosphate binders were not unavailable. Patients had stable HCO₃, average calcium (2.22mmol/l), PO₄ (1.96 mmol/l) and alkaline phosphatase (92.55 u/l). Among patients with iPTH higher than 500 pg/ml glomerulonephritis (47.0%) and adult polycystic kidney disease (17.1%) were dominant. 10% of patients were treated with paricalcitol (no serious adverse effects), with one case of transitory hypercalcemia.

We recorded a 10% decline in the level of iPTH with 1 patient, 2 % with 5 patients, and 30% decline with 2 patients.

Bone tissue changes significantly affect the life quality of dialysis patients and increase mortality risk due to cardiovascular complications. Individual results leave no room for complacency, as 20.1% of patients had extremely high values of iPTH, 44.0% high risk of adynamic bone disease, whereas 15.5% had values tolerable for HD. Prompt detection of this problem and adequate therapy need to become a regular part of clinical practice.

OP-30 - Hemodialysis, Apheresis, Artificial Organs

Achieving K/DOQI Guidelines Therapeutic Targets in Haemodialysis Patients

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The K/DOQI guidelines for haemodialysis (HD) patients define therapeutic targets for renal osteodystrophy: Ca:8.4-9.5 mg/dL, P:3.5-5.5 mg/dL, iPTH:150-300 IU and CaXP<55. They also suggest Hb target for renal anaemia 10-12 g/dL and URR>65% for adequacy of HD.

Objective: The aim of the study was to assess the proportion of HD patients achieving these targets.

Method: We have retrospectively investigated 164 HD patients (95 males) with mean age 61.5 years. Levels of Ca, P, iPTH, CaXP, Hb and URR were determined as a mean of two monthly successive estimates.

Findings: Mean values ±SD of Ca, P, iPTH, CaXP were 90.2±0.75 mg/dL, 5.09±1.59 mg/dL, 276.2±228 IU and 45.75±14.25 respectively, and the proportion of patients achieving values within the therapeutic targets were 53, 47, 34, and 75% respectively. 21 patients (13%) achieved all 4 recommendations. Mean value of Hb was 11.7±1.16, while 57% of the values were within the therapeutic targets. Mean URR was 66.1±7.9% and 62.3% of patients had achieved values >65%. These findings are comparable to those reported in the literature.

Conclusion: The attempt to achieve therapeutic targets for renal osteodystrophy, renal anaemia and adequacy of HD was far short of meeting K/DOQI guidelines targets, and denote the difficulty in achieving them in HD patients.

OP-31 - Hemodialysis, Apheresis, Artificial Organs

Glycosylated Hemoglobin (HbA1c) as a Risk factor for Coronary Artery Calcification in Nondiabetic Hemodialysis Patients

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Introduction: Diabetes is a strong risk factor for vascular calcification (VC) in hemodialysis (HD) patients. We investigated the relationship between HbA1c level and coronary artery calcification (CAC) in non-diabetic HD patients.

Methods: Two-hundred and twenty-four non-diabetic prevalent HD patients were enrolled (mean age 61 12 yrs, HD duration 82 46 mo). Inclusion criteria were to have detectable CAC score (CACs) quantified by multi-slice CT and HbA1c levels measured quarterly within two years prior to multi-slice CT. Time-averaged clinical and laboratory data, recorded within the same interval, were used to determine variables independently associated with CACs category (1-100, 101-400 and >400).

Results: Mean HbA1c was 4.9-0.4% (3.8-6.7%). HbA1c was positively correlated with age, systolic blood pressure, body-mass index, and lipid parameters and inversely with HD duration. Mean CACs was 894 ±1449 (1-9970), 45% of the patients had severe CACs (> 400). CACs was significantly correlated with age, male gender, presence of CVD, serum Ca, P, Ca-P product and HbA1c (r: 0.198, p: 0.003). HbA1c was an independent predictor for CACs beside age, HD duration and CVD history in multiple ordinal regression analysis.

Conclusion: HbA1c is a novel risk factor for CAC in non-diabetic HD patients.

Multiple ordinal regression analysis for CACs groups as a dependent variable

Independent variables	OR (95%CI)	P value
Age (per 1 year)	1.03 (1.01 - 1.04)	<0.0001
HD duration (per 1 year)	1.09 (1.03-1.15)	0.001
CVD history	(-)	1.0 (reference)
	(+)	1.68 (1.08-2.61)
HbA1c (per 1%)	1.55 (1.03-2.31)	0.04

Variables included into model: age, HD duration, gender, CVD, BP, body mass index, albumin, hemoglobin, Ca, P, Ca-P product, PTH, hs-CRP and lipid parameters (Model chi-square: 63, p<0.0001, r²: 0.29)

OP-32 - Hemodialysis, Apheresis, Artificial Organs

Epidemiology of CKD-MBD Guidelines Implementation in R. Macedonia

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Objective: Clinical guidelines are difficult for implementation into routine daily practice. We report on the current data in diagnosis and treatment of mineral and bone disorders (MBD) in dialysis patients in R.Macedonia. **Methods:** A questionnaire was sent to all HD centers, explaining the aim and required clinical, biochemical and treatment data related to MBD. An analysis based on KDOQI-MBD guidelines in 812(70.6%) patients is reported. **Findings:** Serum calcium (Ca) concentration (2.1-2.4mM) was found in 59% of patients. Phosphate control (1.1-1.8mM) was achieved in 58% and CaxP<4.4 was calculated in 80.6% of the population. Parathyroid hormone (PTH) levels (150-300pg/ml) were obtained in 23.9% of patients. PTH >500pg/ml, considered as hyperparathyroid bone disease was found in 21.1%, while the largest part (42.2%) of patients considered as adynamic bone disease (ABD) was reported with PTH <150pg/ml. The majority of patients (57%) were on 1.75mM Ca dialysate. Calcium carbonate was phosphate binding agent in 90.3% of patients, up to 3gr/day (77.8%). Vit.D was prescribed in almost half of patients (44.4%). **Conclusion:** Although with a relatively good mineral control, the use of high (1.75mM) dialysate Ca concentration, calcium carbonate and vit.D treatment might be associated with the most prominent hypoparathyroid/ABD condition in our dialysis population.

OP-33 - Hemodialysis, Apheresis, Artificial Organs

Vascular Calcification, Inflammation and Coronary Flow Velocity in Hemodialysis Patients

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Background: Decreased coronary flow reserve (CFR) as a marker of endothelial dysfunction, coronary artery calcification and inflammation are well-known cardiovascular risk factors in hemodialysis (HD) patients. In this cross-sectional study, we aimed to investigate the correlation of anatomical and functional coronary artery disease (CAD) by using coronary arterial calcification scores (CACS) and CFR.

Methods: Sixty-four end stage renal failure patients enrolled in this study (38 males, 26 females). Thirty nine healthy subjects (22 males, 17 females) included in control group. Biochemical parameters and acute phase inflammation marker (high sensitive C-reactive protein: hsCRP) of patients were recorded before dialysis. The coronary artery calcium scores were measured by electron-beam computerized tomography (EBCT) method. CFR recordings were performed by trans-thoracic doppler echocardiography (TTDE). Relationship between coronary artery calcium scores (CACS) and CFR were evaluated. **Results:** The mean CACS was 281±589 and 29 patients had CACS < 10. Patients with CACS > 10 had significantly lower CFR values as compared to patients with CACS < 10 (1.56±0.38 vs 1.84±0.53, p=0.024). However, there was no difference in hs-CRP values between the groups. CFR was negatively correlated with CACS (r=-0.276 p=0.030).

Conclusions: Anatomical coronary artery lesion severity assessment by EBCT as CACS correlates with the functional severity of lesions measured by CFR. Inflammation was not associated with arterial calcification and CFR in this study group. This association between CFR and CACS might indicate two different (anatomical and functional) aspects of the common pathophysiology of arterial system in HD patients.

OP-34 - Hemodialysis, Apheresis, Artificial Organs

Time-Course Decrease in Fetuin-A Levels Predicts Mortality: Not Dependent on Inflammation but on Gender

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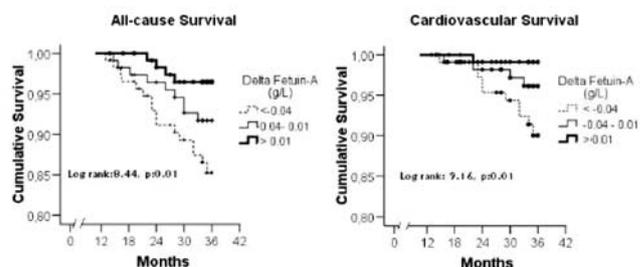
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Introduction: The association between serum fetuin-A levels and mortality is controversial. We investigated whether changes in fetuin-A levels (Δ fetuin-A) with time predict cardiovascular (CV) and all-cause mortality in HD patients. **Methods:** Fetuin-A levels were measured twice with an interval of 12 months by ELISA (Biovendor) in 351 prevalent HD patients (mean age 57±13 yrs, HD duration 54 ±47 months). After an additional 24 months follow-up, all-cause and CV mortality were assessed.

Results: Fetuin-A concentrations decreased from 0.24±0.06 g/L to 0.23 ±0.07 g/L (p<0.001). During follow-up, 29 patients died. Fetuin-A levels at 12th month were lower in patients who died than those alive (0.17±0.04 vs 0.23±0.07 g/L, p<0.001). Cox-regression analysis showed that Δ fetuin-A level was an independent predictor of both overall and cardiovascular mortality (adjusted with age, gender, diabetes, HD duration, Hs-CRP, albumin, Ca, P, Ca-P product, and hemoglobin) (Table). However, in gender-subgroup analysis, Δ fetuin-A predicted mortality only in males. The patients with Δ fetuin-A levels <0.04 g/L (third tertile) had the highest overall and CV mortality rates (Figure). 0.1 g/L increase in fetuin-A level was associated with 49% decrease in overall and 67% decrease in CV mortality.

Conclusion: Not baseline but decrease in serum fetuin-A concentration is associated with increased mortality in HD patients. This effect is gender-dependent and independent of inflammation.

Overall and cardiovascular survival in fetuin-A tertiles



Predictors of mortality in study group

Table. Cox regression analysis to determine predictive factors for mortality (parameters included into the model: age, gender, diabetes, HD duration, Hs-CRP, albumin, Ca, P, Ca-P product, Hb and Δ fetuin-A

For overall mortality	RR (95%CI)	p value
Presence of diabetes	4.90 (2.34-10.2)	<0.001
Hs-CRP (per 0.1 mg/dl)	1.20 (1.03-1.39)	0.01
Δ Fetuin-A (per 0.1 g/L)	0.51 (0.33-0.78)	0.002
For cardiovascular mortality		
Presence of diabetes	11.3 (3.44-37.4)	<0.001
Age (per 1 year)	1.07 (1.01-1.13)	0.01
Δ Fetuin-A (per 0.1 g/L)	0.33 (0.16-0.65)	0.001

OP-35 - Hemodialysis, Apheresis, Artificial Organs**Quality of Sleep in Patients Undergoing Hemodialysis Therapy**

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Objective: The aim of this study was to determine SQ (sleep quality) in HD (hemodialysis) patients and to evaluate its relationship with patient's QoL (quality of life) and some sociodemographic data.

Method: 200 HD patients from clinics for hemodialysis in Sarajevo and Ilidza, B&H were enrolled in the study. Out of the test material, we applied: General questionnaire for registration of sociodemographic characteristics of patients, Pittsburgh Sleep Quality Index and Health Survey for Dialysis Patients.

Findings: 73,5% of HD patients have poor SQ. The average sleep latency of patients is 48,20 minute and the average Sleep Duration is 4,95 hours. 98.5% of patients experiencing some sort of sleep disturbances on the weekly base. The most common sleep disturbances are: Excessive daytime sleepiness (34%), pruritus (28%) and restless legs syndrome (20.5%). 93% of patients experiencing daytime dysfunction on weekly or monthly base. 46,5% of HD patients use sleep medications. Patients SQ and QoL differed significantly by age, employment status and HD shift ($p < 0,05$). Younger patients, employed patients and patients in 3rd nocturnal HD shift have significantly better SQ and QoL.

Conclusion: Impaired SQ is significantly correlated with impaired QoL in general and with impaired physical and mental health separately.

OP-36 - Hemodialysis, Apheresis, Artificial Organs**The Relationship of Restless Legs Syndrome (RLS) with Insomnia in Maintenance Hemodialysis Patients (With author authorization, the presentation will be done as poster)**

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Introduction and Aims: Many patients in hemodialysis treatment complain of poor sleep. The aim of this study was to assess the prevalence of RLS and supposed association of RLS with insomnia in maintenance dialysis patients.

Methods: 88 patients in maintenance hemodialysis (32 F/56 M mean age 42.9 ± 11.6 years) were enrolled in the study. The patients completed a questionnaire during the dialysis sessions. We used the four clinical criteria suggested by the IRLSSG for the diagnosis of RLS. For the diagnosis of insomnia we used night-time insomnia symptoms: difficulty in falling asleep, difficulty maintaining sleep or early awakening.

Results: 20 patients (22.7%) were positive for RLS and 63 patients (71.5%) were positive for diagnosis of insomnia.

Patients with RLS have significantly more insomnia comparing with patients without RLS, respectively 85% vs 47% $p=0.02$. Regarding to difficulty in falling asleep, difficulty maintaining sleep and early awakening for groups of patients with RLS vs without RLS the results were respectively: 60% vs 24% ($p=0.018$), 50% vs 22% ($p=0.016$) and 45% vs 23.5% ($p=0.02$).

Conclusions: RLS is frequent in hemodialysis patients. There is a significant relationship between RLS and insomnia in these patients suggesting that RLS is associated with worsening sleep quality.

OP-37 - Hemodialysis, Apheresis, Artificial Organs**Use of Antibiotic Lock Technique in Prevention of Hemodialysis Catheter Related Infections - Single Center Experience**

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Tunneled catheters are widely used for patients requiring hemodialysis. However, long-term catheter survival is limited by tunneled catheter-related infections (CRI).

Objective: The aim of the present study was to prospectively evaluate efficacy of a vancomycin-heparin lock technique in preventing catheter-related infections.

Methods: A total of 85 hemodialysis patients were enrolled in this study. Patients were randomly assigned to receive either an antibiotic-heparin lock solution (antibiotic group: vancomycin 25 mg/ml, heparin 1000 U/ml) or heparin lock solution (non-antibiotic group: heparin 5000 U/ml) during the 10-month study period. The primary end point of the study was CRI. Catheter malfunction was assessed as a secondary end point. CRI was determined through quantitative catheter cultures, quantitative blood cultures, or both.

Results: CRI developed in ten patients in non-antibiotic group and only one patient in antibiotic group. Infection rates per 100 catheter-days were 0.01 in the vancomycin group compared to 0.46 in the heparin group. Kaplan-Meier analysis showed that mean CRI-free catheter survival of 67 days in the antibiotic group was greater than that in the non-antibiotic group (55 days). However, incidence of catheter malfunction was significantly higher in vancomycin group than in non-antibiotic group.

Conclusions: Vancomycin lock solution reduces CRI but decrease catheter survival rates.

OP-38 - Hemodialysis, Apheresis, Artificial Organs**Efficacy of Antibiotic Therapy for Bacteremia Associated with Tunneled Femoral Catheters for Hemodialysis**

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Tunneled dialysis catheters have evolved into an important option for hemodialysis (HD) patients access. The major complications of these catheters are catheter thrombosis and infection. Catheter associated bacteraemia (CAB) involves therapy with systemic antibiotics and instillation of an antibiotic lock into the catheter lumen. In this study 60 chronic HD patients (38 female and 22 male, average 40 years), with 85 tunneled femoral catheters (TFC) were prospectively monitored for infection during a period of a two years. All the patients were on regular HD ambulatory (as a outpatient). Clinical signs of infection were monitored and blood cultures from the catheter (BCC) and from peripheral vein (BCP) were taken. All patients with CAB were treated with a 21 day course of intravenous antibiotics and antibiotic lock. During this study, there were 8859 catheter days (average 136 d), with 18 episodes of CAB or 2,03 episodes/catheter days. Fourteen infections (77,8%) were caused by gram-positive cocci only; two infections (11,1%) were caused by gram-negative rods only, and two infections (11,1%) were polymicrobial. Three TFC were removed because of severe uncontrolled sepsis. TFC salvage was successful in all other patients treated with antibiotics alone. We concluded that use of antibiotic lock in conjunction with systemic antibiotic therapy, can eradicate CAB, with careful follow up.

OP-39 - Hemodialysis, Apheresis, Artificial Organs**Sleep Disturbances in Hemodialysis Patients**

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Objective: The evaluation of sleep quality and sleep disordered breathing in 164 hemodialysis (HD) patients.

Method: Two different questionnaires: the entire eight-item Athens Insomnia Scale (AIS), that quantifies sleep difficulty, and the Epworth Sleepiness Scale (ESS) for the evaluation of daytime sleepiness were used to measure sleep quality. Total Scale scores along with anthropometric, social and behavioral parameters, comorbidity, heart function, concomitant medications and routine blood analysis were reported for all patients.

Findings: 73/164 patients (44.5%) had AIS total score ≥ 6 and were characterized as insomniacs. No significant differences were observed between insomniacs and non insomniacs, apart from an increase in the use of sleep promoting agents ($p=0.014$). Patients of the morning shift had higher AIS score compared to patients of the afternoon and evening shifts ($p=0,017$). 11/164 patients (6.7%) had ESS total score ≥ 10 and were characterized as sleepers. Sleepers had shorter HD duration ($p=0.016$), higher prevalence of hypertension ($p=0,049$) and non significant tendency for bigger neck circumference compared to non sleepers. ESS score was positively related to patients' weight ($r=0.16$, $p=0.043$), serum urea ($r=0.155$, $p=0.048$) and number of day naps ($r=0.264$, $p=0.001$).
Conclusion: A large proportion of HD patients suffer from low sleep quality.

OP-40 - Hemodialysis, Apheresis, Artificial Organs**Outcome of Femoral Catheters for Hemodialysis Used as a Temporary Vascular Access**

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Femoral catheterisation (FC) is fast, simple and associated with a low risk of complications, but is not recommended by most of the authors. In a prospective study we looked at the outcome of a group of 341 patients (pts) (M=195, and F=169) receiving haemodialysis (HD) treatment via 364 FC during the 3 years period. All this pts were hospitalised with ESRD at our Clinic and start HD treatment with FC. Duration of FC were 5-120 days (median 32d) with cumulative total of 11 818 days. Catheters were removed when no longer required (permanent VA was performed) or significant complications occurred. We analysed microbiologically blood cultures from peripheral vein (BCP) from catheter (BCC), and catheter tip (CT). Mostly of the FC were electively removed - 320 (88%), for malfunction 26 (7,1%), suspected catheter-related infection (CRI) -18 (4,9%), Infection rate was 1,52 episodes/1000 catheter days. Microbiologically analysed CT shows that 134 (36,8%) were sterile, and Staphylococcus coagulasa negative (CoNS) was mostly isolated microorganism 138 (37,9%). For BCC - 193 (52,4%) were sterile, and CoNS was mostly isolated microorganism 100 (27,4%) and for BCP -276 (76%) were sterile, and CoNS once again was mostly isolated microorganism 54 (14,9%). We analysed risk factors for catheter survival in this group with Cox regression model adjusted for age, sex and comorbidity and we found that they are risk factors: Age ($<51/>51$) ($p=0,0007$) sex ($p=0,002905$) and diabetes mellitus ($p=0,008$)
We concluded that femoral catheters can remain in place for a long time without complication with good care from medical team.

OP-41 - Hemodialysis, Apheresis, Artificial Organs**Analysis of Diagnostic Iron Indices in Hemodialysis Patients**

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Objective: The evaluation of iron indices in hemodialysis patients.

Method: Factor analysis of correspondences and ascending hierarchical classification were applied on data selected from 98 hemodialysis patients.

Findings: The two methods of data analysis applied in combination led to the formation of three groups: Group 1 with markers implying iron deficiency, group 3 with markers indicative of iron adequacy and an intermediate group 2. A report of patients who responded to intravenous iron administration by increasing hemoglobin by 10% or more from baseline value revealed that the highest percentage (40%) of iron deficient patients was assigned to group 1, the lowest (28%) to group 3 and group 2 included an intermediate percentage (28%) of iron deficient patients. The formation of groups was based on Kt/V, hemoglobin, hematocrit, percentage of hypochromic erythrocytes, erythrocyte and reticulocyte hemoglobin content and the ratio of soluble transferrin receptor to log ferritin. As the criterion for the formation of group 2 was exclusively the low reticulocyte hemoglobin content, it is possible that this group consisted of patients with recent development of iron deficiency.

Conclusion: Factor analysis of correspondences and ascending hierarchical classification could constitute useful tools in the study of iron adequacy indices in hemodialysis patients.

OP-42 - Hemodialysis, Apheresis, Artificial Organs**Effects of HCV Infection on Anemia Correction in Our HD Patients**

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Hepatitis C virus infection is common among patients undergoing hemodialysis (HD).

Aim: We evaluated the effect of HCV infection on anemia correction in our HD population.

Method: We retrospectively studied 176 chronic HD patients (86 HCV positive and 90 HCV negative) and monthly samples (complete blood count, iron stores, dialysis adequacy, ferritin, alanine aminotransferase, aspartate aminotransferase, and G-glutamyl transpeptidase) levels were collected between January 2008 and January 2009. Their requirements of erythropoietin (EPO) and intravenous (IV) iron were assessed.

Results: The mean EPO requirement for the hepatitis group was 57 ± 11 U/kg/weekly in comparison with the non hepatitis group, which required 114 ± 22 U/kg/weekly (p value <0.001). The mean dose of IV-iron was 150 ± 30 mg/month for hepatitis patients and 300 ± 50 mg/month in non hepatitis group. Mean serum levels of ferritin were significantly higher among subjects with HCV infection (520 ± 366 ng/mL and 186 ± 136 μ g/dL) than among subjects without liver disease. Serum levels of ferritin were directly and significantly correlated with serum levels of ALT, AST, and GGT ($r=0.27$, $r=0.21$, $r=0.25$; $P<0.001$).

Conclusion: Our study showed that ESRD patients on HD with HCV infection have lower requirement of EPO replacement compared with HCV-negative patients.

OP-43 - Hemodialysis, Apheresis, Artificial Organs

Reduced Serum Hcpicidin Levels in Hemodialysis Patients with Chronic Hepatitis C

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Background: Hcpicidin, a liver-derived peptide induced by iron overload and inflammation, and hcpicidin decrease is a possible pathophysiological mechanism of iron overload in patients with chronic hepatitis C virus infection (HCV). **Methods:** We measured hcpicidin, iron, total iron binding capacity (TIBC), ferritin, hs-CRP and IL-6 levels in 30 HCV(+) hemodialysis (HD) patients (14 male, mean age; 47±17 years) and 30 control HCV(-) HD patients (13 male, mean age; 52±15 years) and 20 healthy volunteers (14 male, mean age; 35±12 years).

Results: Hcpicidin levels were similar between HD patients and healthy controls (142±23 vs 137±20 ng/mL; p=0.417). On comparing HCV(+) and (-) HD patients, hcpicidin levels of HCV(+) patients (135±25 ng/mL) were significantly lower than HCV(-) patients (148±18 ng/mL) (p=0.025). Serum iron levels were significantly higher in HCV(+) patients (86.1±42.68 vs 62.5±23.7 µ/dL; p=0.035). TSAT levels of HCV(+) patients were also significantly higher (31.8±16.2 vs 24.8±11.6; p=0.016). TIBC and ferritin levels were similar between two groups. Serum IL-6 levels of HCV(-) patients were significantly higher than HCV(+) patients (16.06±11.07 vs 9.27±7.87 pg/mL; p=0.018).

Conclusion: Although HD has been considered as an inflammatory state, probably accounting for the increased serum hcpicidin levels, serum hcpicidin levels are suppressed by HCV in patients with chronic HCV infection, which may be an important factor in liver iron accumulation in this condition.

OP-44 - Clinical Nephrology

The Demographic and Clinical Characteristics of Patients with Autosomal Dominant Polycystic Kidney Disease: Analysis of 1318 Turkish Patients

Tevfik Ecdar
for the PKD Working Group*

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Objectives: The aim of this multicenter study was to investigate the demographic and clinical characteristics of patients with autosomal dominant polycystic kidney disease (ADPKD).

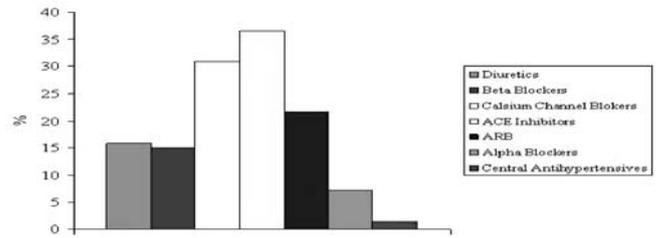
Methods: 1318 patients with ADPKD who were followed-up at eleven different centers from 2001 through 2009 were recruited for this study.

Results: The male to female ratio was 9:10 (623 were male and 695 female), and the age of initial diagnosis was 50.2 ± 15.8 (mean ± SD) years. 12.4% had end stage renal disease; 73.6% of those patients were treated with hemodialysis. 65.2% of patients had never smoked, 15.2% were ex-smokers and 19.7% were current smokers. The clinical characteristics of patients are shown in Table 1. The mean systolic blood pressure (BP) was 136±24.2 mm Hg and the mean diastolic BP was 84.7±18.6 mm Hg. The antihypertensive drugs used by the patients are shown in Figure 1. The mean glomerular filtration rate that was calculated by the MDRD formula in 454 of the patients was 57.1± 36.4 ml/min.

Conclusion: This multicenter study that evaluated the clinical characteristics of patients with ADPKD in Turkey showed that hypertension is the most common (71.8%) clinical finding. Drugs blocking the renin-angiotensin system (ACE inhibitors and ARBs) are the most widely used antihypertensive agents in these patients.

OP-44

The frequency of the use of antihypertensive drugs (ACE: Angiotensin converting enzyme, ARB: Angiotensin receptor blockers).



Clinical characteristics of the patients. Since all of the patients were not evaluated for all the clinical findings, the total number of findings is less than the total number of patients.

	Yes	No
Hypertension	825 (71.8%)	323 (28.2%)
History of macroscopic hematuria	244 (22.4%)	845 (77.6%)
History of urinary tract infection	242 (22.8%)	818 (77.2%)
History of urinary tract stone	275 (25.4%)	807 (74.6%)
Liver cysts	355 (37.9%)	580 (62.1%)
Mitral valve prolapse	21 (8.3%)	230 (91.7%)
Colonic diverticuli	4 (8.1%)	45 (91.9%)
Hernia	79 (12.6%)	545 (87.8%)
Intracranial aneurysm	22 (17.3%)	105 (82.7%)

OP-45 - Hemodialysis, Apheresis, Artificial Organs

Intraerythrocyte Ferritin is not a Good Marker to Indicate Iron Reserves in Anti-HCV Positive Hemodialysis Patients

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Background: To investigate whether intraerythrocyte ferritin is a better marker to indicate body iron reserves than serum ferritin in hemodialysis patients with HCV virus infection.

Method: 40 (17 males, 23 females) HCV positive, HBsAg and HIV negative patients undergoing hemodialysis and who had normal CRP levels, no leukocytosis, no recent blood transfusion and no oral or parenteral iron treatment in the last two weeks were included in the study.

Erythrocyte ferritin level was measured by radioimmunoassay (RIA) method using DSL Inc, USA kit.

Results: The mean serum ferritin level was 992±424 ng/ml, and the mean erythrocyte ferritin level was 1.8±1.72 ng/gHb in HCV positive patients undergoing hemodialysis. However, unlike was expected, a significant positive correlation between serum ferritin and erythrocyte ferritin was found in HCV positive hemodialysis patients (p<0.001).

Conclusion: Serum ferritin level is increased in HCV-positive hemodialysis patients independent of inflammation. As a result, erythrocyte ferritin level is thought to be the best indicator of iron reserve. In this study however, we found a significant positive correlation between erythrocyte ferritin level and serum ferritin in HCV-positive patients undergoing hemodialysis. This shows that erythrocyte ferritin level can't be used to indicate iron reserves in HCV-positive hemodialysis patients.

OP-46 - Clinical Nephrology**Pulse Pressure Predicts All-Cause and Cardiovascular Mortality in Hemodialysis Patients: A 5 Years Prospective Observational Study**

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Background: The aim of the study was to estimate the role of traditional cardiovascular risk factors of CV mortality in haemodialysis (HD) patients together with predialysis nephrology referral (NR) and prior CVdisease.

Methods: A total of 261 prevalent HD patients were prospectively followed up for 60 months. We examined several traditional CV risk factors: Systolic blood pressure (SBP), diastolic blood pressure (DBP), pulse pressure (PP), total cholesterol, HDL-high-density lipoprotein, LDL-low-density lipoprotein, smoking, BMI-body mass index, presence of diabetes and left ventricular hypertrophy (LVH). NR was quantified as the time-interval between the start of regular care and the day of first dialysis.

Results: During the follow-up, 117 patients (44.8%) had died, most from cardiovascular diseases (63.2%). Both, Kaplan-Meier and univariate Cox analysis showed that age, presence of diabetes, prior CVdisease, NR<12vs>12months, PP>60vs<=60mmHg and LVH (>131g/m² for men and >100g/m² for women), were predictor of all-cause and CVmortality. DBP<70vs70-90mmHg was predictor of all-cause and SBP>150vs<130mmHg was predictor of CVmortality. Multivariate Cox regression analysis, showed that prior CVdisease (HR 1.99; 95%CI 1.04-3.81, p=0.037), DBP (HR 3.96; 95%CI 2.00-7.83, p=0.000), PP (HR 5.92; 95%CI 1.64-21.38, p=0.007) and LVH (HR 2.48; 95%CI 1.09-5.64, p=0.031) were predictors of all-cause mortality, but only prior CVdisease (HR 2.17; 95%CI 1.01-4.68, p=0.048) and PP (HR 11.76; 95%CI 1.56-88.96, p=0.017) were predictors of CVmortality in HD patients.

Conclusions: During HD period unique traditional risk factors for HD patients, pulse pressure, was associated with higher CV mortality.

OP-47 - Clinical Nephrology**The Effects of L-Carnitine Treatment in Predialysis Patients with Erythropoietin- Resistant Anemia**

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Background: L-carnitine has been extensively studied for patients in renal failure. It has been known that carnitine levels are altered in chronic renal failure and in haemodialysis (HD) patients.

Many patients receiving rHuEPO have low carnitine levels, and this has been shown to affect the amount of rHuEPO needed. The aim of the study was to demonstrate whether L-carnitine treatment could further improve the anemia in predialysis patients under recombinant human erythropoietin (r-HuEPO) therapy, leading to a reduction in r-HuEPO requirements.

Materials and Methods: The study is trans-sectional 17 patients presented 5th stage of CKD (GFR <15ml/min). Creatinine clearance was calculated by using the Cockcroft and Gault equation. The mean age was 42±16,3. L-carnitine (2 g /day) was administered for 3 months to a group of 14 patients; the results were compared with data from a placebo control group (N = 13). L-Carnitine treatment promoted a reduction in r-HuEPO requirements in the active group from 5444 ± 1149,03 UI/kg/month in 5000 ± 1044,47 UI/kg/month p< 0,03

Conclusion: L-carnitine deficiency might promote EPO resistance in predialysis patients, which is corrected by L-carnitine supplementation, ultimately reducing rHuEPO requirements

OP-48 - Clinical Nephrology**Combination of MESOR Analysis and Night Dipping of 24 Hour Blood Pressure Monitoring are Good Predictors of Target Organ Damage in Patients with Chronic Kidney Disease**

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Objectives: To evaluate whether combination of night dipping and MESOR analysis (midline estimated statistic of the rhythm) in patients with chronic kidney disease and essential hypertension is a good predictor of target organ damage.

Materials-Methods: 24 hour blood pressure monitoring was evaluated in 50 patients (25 with chronic kidney disease and 25 with essential hypertension) by the use of night dipping (average daily systolic/night systolic ratio and average daily diastolic/night diastolic ratio) and MESOR analysis (by the use of Chronolab 3.0 software)

Results: In the subgroup of patients with CKD, with sustained night dipping (17,75±6% on average) at 24 hour blood pressure monitoring, serum creatinine was lower (188,7±14), while in the subgroup of patients in CKD with blunt night dipping (6±1,45 on average), serum creatinine was significantly higher (363,5±71,4 micromol/l). In the subgroup of patients with essential hypertension, and sustained night dipping (14,3±3,5% on average), serum creatinine was insignificantly higher (86,4±11,9) than in the group with blunted night dipping (4,3±1,3% on average) (serum creatinine -72±11,9 micromol/l). The use of MESOR analysis of the systolic and diastolic blood pressure in combination with the night dipping improves the evaluation of circadian variability in both groups and subgroups.

Conclusions: Absence of night dipping of blood pressure is associated with degree of target organ damage in patients with chronic kidney disease. Combination of night dipping and MESOR analysis may be a better predictor than using only one of these methods.

OP-49 - Clinical Nephrology**Vitamin B6 and Chronic Kidney Diseases**

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Objective: Vitamin B6 (VB6) is a water soluble vitamin, which is important for the normal function of multiple organ systems.

Purpose of the study: To investigate the metabolic disorders of VB6 in patients with chronic kidney diseases.

Material-Methods: Erythrocyte (Er) VB6 was investigated in 15 patients suffering from chronic glomerulonephritis (CG) and nephrotic syndrome (NS) with normal GFR and in 16 haemodialysis patients (HDP) during the EPO treatment. Plasma VB6 was determined by radioenzymatic assay and ErVB6 by means of an indirect enzymatic method, and was expressed as the effect of pyridoxal-5-phosphate(PLP) in per cents.

Results: 1. In patients with CG and NS with normal GFR plasma (15.5±3.8 nmol/L) and ErVB6 (effect of PLP=42.1±7.5%) were significantly decreased, p<0.01. 2. Six months supplementation by pyridoxine 50 mg/day led to the effect of PLP in the normal range (16.3±1.4%) in these patients. 3. In HDP treated by EPO the effect of PLP significantly increased from 19.0±1.8 to 30.4±2.4%, (p<0.01). After three months supplementation of pyridoxine 20mg/day, the effect of PLP was in the normal range (16.4±1.9%, p<0.01).

Conclusions: A favorable effect of pyridoxine 50 mg /day in CG NS and 20 mg/day in HDP treated by EPO has been found.

OP-50 - Epidemiology and Basic Science**Prevalence of Chronic Kidney Disease in the Republic of Macedonia: The SKROBB Study**

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The SKROBB study conducted in 2006 is a population-based study to evaluate the prevalence of stages and the risk and demographic factors associated with CKD among Macedonian patients aged 20 and older.

The prevalence of CKD (age and gender adjusted) was: stage 1 - 3,57%, stage 2 - 2,89%, stage 3 - 7,1%, stage 4 - 0,25%, stage 5 - 0,18%, or a total of 13,99%. Stage 1 and 2 prevalence were estimated on the basis of proteinuria (qualitatively). The factors significantly associated with lower GFR (less than 60 ml/min/1.73 m²) were: age over 60, OR- 20,7 with 95% CI 14,6-29,4, p=0,0000; diabetes, OR-3,13 with 95%CI 2,28-4,28, p=0,0000; proteinuria, OR -2,6 with 95% CI 1,76-3,86, p=0,0000; presence of cardiovascular diseases, OR-6,93 with 95% CI 4,98-9,66, p=0,0000; hypertension, OR-6,69 with 95% CI 4,83-9,26, p=0,0000; anemia defined as hemoglobin less than 110 g/l, OR-1,867 with 95%CI 1,235-2,824, p=0,0026; female gender, OR 1,463 (95% CI 1,096-1,951, p=0,0094); low educational level (primary versus all other) OR-3,63 with 95%CI 2,74,87, p=0,000. Place of living (urban/rural), body mass index, ethnicity and smoking were not significantly associated with lower GFR.

The prevalence of CKD in Macedonia is high and similar to that in Western countries.

OP-51 - Clinical Nephrology**Influence of Insulin Resistance upon Glomerular Filtration Rate in Patients with Diabetes Mellitus Type 2**

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Objective: To determine insulin resistance (IR) influence upon glomerular filtration rate (GFR) in patients with diabetes mellitus type 2 (DM2).

Methods: The investigation included 51 patients with DM2: age - 57,1 ± 8,4 years, male: female - 31:20. GFR was calculated by MDRD formula - 91,01+21,65 ml/min/1,73m². Mean daily glycemia (MDG) - 12,2±3,9 mmol/L, glycosylated hemoglobin - 9,12±2,18%, the level of endogenous insulin secretion was determined by serum C-peptide concentration (2,33±1,61 ng/ml). The IR was evaluated by Homeostasis Model Assessment of IR (HOMA-IR): Median - 2,35 (25 %'s-75 %'s - 1,4-3,1). The correlation analysis was spent by Spearman Rank Correlations (R).

Results: The correlations between GFR and HOMA-IR (R=0,42, p=0,004), GFR and MDG (R=0,42, p=0,002), GFR and HOMA-IR (R=0,46, p=0,01) are significantly direct moderate. Thus, hyperglycemia and diabetes decompensation level lead to the development of hyperfiltration. So, IR is both the reason of hyperglycemia, which causing kidney damage, and also the factor leading to GFR impairment.

Conclusion: Even in case of good compensation of diabetes, correction of hyperinsulinemia and decrease of IR threshold are necessary, and it can be considered as one of renoprotective strategy components.

OP-52 - Clinical Nephrology

Insulin Resistance and Coronary Flow Velocity Reserve in Patients with Autosomal Dominant Polycystic Kidney Disease

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Objectives: Cardiovascular problems are a major cause of morbidity and mortality in patients with autosomal dominant polycystic kidney disease (ADPKD). The aim of this study was to investigate coronary flow velocity reserve (CFVR) as a marker of endothelial dysfunction, carotid intima media thickness (CIMT) as a marker of subclinical organ damage and insulin resistance (IR) as a cardiovascular risk factor in patients with ADPKD.

Methods: Twenty-two normotensive ADPKD patients with well-preserved renal function and 19 healthy subjects were included in the study. Creatinine clearances were calculated by the Cockcroft-Gault formula. The homeostasis model of IR (HOMA-IR) was used to measure IR. CIMT was measured by high-resolution vascular ultrasound. CFVR was calculated as the ratio of hyperemic to baseline diastolic peak velocities by echocardiography.

Results: There was no significant difference between the two groups regarding age, gender, body mass index, systolic and diastolic blood pressures, cholesterol and triglyceride levels. However, CIMT and HOMA-IR were significantly increased and CFVR was significantly decreased in patients with ADPKD compared to healthy subjects (Table 1).

Conclusions: The findings of decreased CFVR, increased CIMT and increased IR suggest that cardiovascular risk is elevated even in the early stages of ADPKD.

Table 1. The Demographic, Biochemical and Echocardiographic Features of both ADPKD Patients and Healthy Subjects

	ADPKD Patients (n:22)	Healthy Subjects (n: 19)	P Value
Age (Years)	38±8	33±7	NS
BMI (kg/m ²)	25±3	25±4	NS
Systolic Blood Pressure (mmHg)	116±14	119±13	NS
Diastolic Blood Pressure (mmHg)	73±8	75±8	NS
Glucose (mg/dl)	102±36	78±6	NS
BUN (mg/dl)	17±7	12±3	NS
Creatinine (mg/dl)	0,89±0,21	0,81±0,13	NS
LDL Cholesterol (mg/dl)	107±35	99±42	NS
Triglyceride (mg/dl)	145±85	103±77	NS
Creatinine Clearance(ml/min)	88±16	144±26	<0.001
Carotis Intima Media Thickness (mm)	0,81±0,31	0,52±0,13	<0.001
HOMA-IR	1,81±0,97	0,85±0,27	<0.001
CFVR	1,84±0,41	2,65±0,64	<0.001

BMI: Body Mass Index, BUN: Blood Urea Nitrogen, LDL: Low Density Lipoprotein, HOMA-IR: HOMA-Insulin Resistance, CFVR: Coronary Flow Velocity Reserve



9th BANTAO CONGRESS
POSTER PRESENTATIONS

PP-001 - Hemodialysis, Apheresis, Artificial Organs

Prediction of Mortality in Hemodialysis Patients Using Different Acute Phase Proteins. Which One is the Best?

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In many studies C-reactive protein (CRP), has been noted as the strongest predictor of long term mortality of hemodialysis (HD) patients while others have pointed to more novel inflammatory markers.

Objectives: of the present investigation were to evaluate the prevalence of inflammation in our hemodialysis unit and the role of positive [high sensitive C-reactive protein (hs-CRP), serum amyloid-A (SAA) and haptoglobin] and negative (fetiun-A, albumin and transferrin) acute phase proteins (APP) together with lipids and divalent ions to predict HD patient mortality. A prospective 36-month long follow-up study of 130 patients (60 males, aged 55.1 ± 12.9 years) maintained by hemodialysis for 107.2 ± 54.72 months at our HD center.

Findings: The prevalence of patients with chronic inflammation was 35.4%. During the follow-up period 24 patients (18.5%) died and 2 patients received transplants. The patients that died were significantly older, had significantly lower serum albumin and higher hsCRP and SAA than the patients that survived. In multivariate analysis, potential independent predictors of mortality in HD patients were hyperphosphatemia, hypoalbuminemia and SAA. **Conclusion:** SAA is a best predictor than hsCRP and could be much more broadly used as a predictable inflammatory marker for end-stage renal disease outcome in the future.

PP-002 - Hemodialysis, Apheresis, Artificial Organs

Erythropoiesis Improvement after Successful Subtotal Parathyroidectomy in Patients Treated by Hemodialysis

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Background: Although inadequate erythropoietin (EPO) secretion is the most important cause of anemia in end-stage renal disease, factors such as secondary hyperparathyroidism (sHPTH) are also implicated

Aim of the Study: To examine the erythropoiesis after sPTX in patients treated with hemodialysis.

Methods: Prospective, randomized, single center study was undertaken in 9 patients (5 men; mean [SD]age, 45.0[15.4] years) who had been receiving regular hemodialysis for 76.8 [43.8] months. Indication for PTX was based on clinical, biochemical, and radiological criteria. Hemoglobin (Hb), calcium (Ca), phosphate (PO₄), AF, iPTH, EPO, analysis of bone marrow cellularity and BFU-E were determined before and 6 months after sPTX.

Results: Successful PTX was accompanied with decrease of Ca, PO₄, AF and PTH. Average Hb increased (87.22±18.6 g/l before and 97.88±10.82/l after PTX), as well as EPO and O/E ratio (5/9 pts) indicating the improvement in EPO concentration. This was followed by: decrease of BFU-E (40.22±11.75 before, and 25.94±9.97), increase of bone marrow cellularity in 7/9 patients and change of ratio between granulocytic and erythrocytic line (G/E) in favor of the erythrocytic one (4.4:1 vs 1.8:1).

Conclusion: Successful PTX was followed with a manifold decrease of serum iPTH levels, increase of serum EPO level, more efficient maturation of the erythroid line and anemia alleviation.

PP-003 - Clinical Nephrology

Is Quantiferon TB Test Useful for the Diagnosis of Latent Tuberculosis Infection in Patients with End-Stage Renal Failure Receiving Hemodialysis

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Aims: In this study we aimed to compare the usefulness of tuberculin skin test (TST) and QuantiFERONs TB Gold in-Tube test (QFT-G), which is an IFN-γ release assay for the diagnosis of latent tuberculosis infection, in end-stage renal disease (ESRD) patients receiving hemodialysis (HD).

Methods: TST was applied to forearm of all cases and interpreted 72 hours later, indurations above 10 mm were accepted as positive. Blood sample for the QFT-TB test was collected from the patients before the HD and QFT-TB test was performed according to the instructions of the manufacturer.

Results: A total of 99 patients receiving HD participated in this study. Of 99 patients TST and QFT-G assay were positive in 14 (%14.1) and 42 (%42.4) of patients respectively. Five of 14 cases with positive TST result had negative QFT-G assay. The other 9 cases with positive TST had also positive QFT-G assay. In 33 cases with positive QFT-G assay, TST was negative.

Conclusions: According to our results, in despite of reduced IFN-γ production in end-stage renal disease (ESRD) patients, QFT-G assay seems to be beneficial and superior to the TST in patients with ESRD receiving HD.

The characteristics of the end stage renal disease patients receiving hemodialysis

Age (years: mean±SD)	54.81±15.26
Gender (M/F)	52/47 (52%/48%)
Dialysis duration (months: mean±SD)	61.52±41.66
Hemoglobin (g/dl)	11.62±1.49
Kt/v	1,58±0,25
Creatinine (mg/dl, mean±SD)	9,53±9,8
Ferritin (ng/dl, mean±SD)	718,2±287,27
C-reactive protein (mg/l, mean±SD)	15,1±25,67
Urea (mg/dl,mean±SD)	138,2±31,34

PP-004 - Hemodialysis, Apheresis, Artificial Organs**Is There Association between the QT Interval (Electrocardiograms) Dispersion and Thrombosis of the Arterio-Venous Fistula in Hemodialysis Patients**

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The aim of this study was to assess the association between electrocardiograms QT interval duration and the number of arterio venous fistula thrombosis (AVFT) in hemodialysis patients (HDP).

We compared the QT and corrected QT (QTc) interval duration (calculated from the post-hemodialysis recorded 12-lead electrocardiogram) among the 129 HDP (73 male; mean age 53.9±24.2 years) stratified in three groups according to the number (>2; 1-2; zero) of the previous AVFT.

The patients without AVFT (39,5%) had significantly ($p<0.05$) shorter QT (356.8±38.87 vs 391.7±44.2 ms) and QTc interval (416.6±34.2 vs 451.8±38.6 ms) duration when compared with the patients (27.2%) with >2 AVFT. A prolonged (at borderline of significance $p=0.05$) QT/QTc interval (383.4±31.8 vs 356.8±38.87 ms/ 444.3±48.1 vs 416.6±34.2 ms) was observed in patients with 1-2 AVFT (33.3%) in comparison with patients without AVFT. There were no significant difference in QT and QTc interval dispersion between the patients with >2 and with 1-2 AVFT.

Conclusion: Post-hemodialysis recorded QT/QTc interval is significantly prolonged in HDP with previous AVFT. The presence of this clinical finding may be associated with cardiac arrhythmias and sudden death in our HDP.

PP-005 - Hemodialysis, Apheresis, Artificial Organs**Serum Markers of Vascular Inflammation and Femoral Atherosclerosis in Hemodialysis Patients**

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Objective: To define the association of markers of vascular inflammation, including fibrinogen, CRP, interleukin-6 (IL-6), tumor necrosis factor- α (TNF- α), intercellular adhesion molecule-1 (ICAM-1) and vascular cellular adhesion molecule-1 (VCAM-1) with atherosclerotic lesions in the femoral arteries of hemodialysis (HD) patients.

Methods: We included 72 stable hemodialysis patients (37 men, mean age 58.7 ±14.8 years). Atherosclerotic vascular lesions were assessed by ultrasonographic measurement of intima-media thickness and plaque score in the femoral arteries (fIMT and fPS respectively). CRP levels were determined by nephelometry and serum cytokine and adhesion molecule levels by ELISA. Correlations of the above inflammatory markers and classic risk factors with the ultrasonographic parameters were tested by bivariate and multivariate stepwise regression analyses.

Findings: fIMT was correlated with age ($p<0.0001$), total and LDL cholesterol ($p=0.041$ and $p=0.017$ respectively), CRP ($p=0.002$) and VCAM-1 ($p=0.041$). In multivariate analysis, apart from age ($p<0.000$), only CRP ($p=0.012$) and IL-6 ($p=0.046$) retained an independent effect. fPS was correlated with age ($p<0.000$), CRP ($p=0.009$), fibrinogen ($p=0.012$) and IL-6 ($p=0.038$) but only age ($p<0.000$) and fibrinogen ($p=0.004$) remained significantly correlated in multivariate analysis.

Conclusions: In HD patients, CRP and IL-6 levels are independent predictors of early femoral atherosclerosis whereas fibrinogen levels are independently correlated with plaque burden.

PP-006 - Hemodialysis, Apheresis, Artificial Organs**Hemodialysis Patients with Hepatitis C and Ultrasound Predictors of Compensated Liver Cirrhosis**

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The aim of the study was to determine the ultrasound predictors of compensated liver cirrhosis in hemodialysis patients with chronic hepatitis C. Doppler ultrasound was made on 80 hemodialysis patients with chronic hepatitis C. Liver size, morphology, surface, echogenicity, and spleen size were the measured morphological parameters, and portal vein diameter with mean flow velocity were the hemodynamic parameters. The cumulative US score was calculated from the formula: $S/nP*100$, where S was the sum of dotting related to each parameter, and nP was the number of parameters evaluated. The score ranged from 0 to 200, with cut-off value level of 66 for distinguishing between the chronic hepatitis (≤ 66) and compensated liver cirrhosis (> 66). US score above 66 was calculated 37 (46.3%) patients on hemodialysis with chronic hepatitis C. Liver morphology ($p=0.039$), liver echogenicity ($p=0.002$), and portal vein mean flow velocity ($p=0.006$) were independently associated with the diagnosis of compensated liver cirrhosis.

The ultrasound could be used for non-invasive diagnose of compensated liver cirrhosis in hemodialysis patients with chronic hepatitis C, with the important value for the estimation of the disease severity and prognosis.

PP-007 - Hemodialysis, Apheresis, Artificial Organs**C Reactive Protein (CRP) Levels in Chronic Hemodialysis Patients and Type of Vascular Access**

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Background: The aim of our single-center cross-sectional study is to compare serum levels of CRP in chronic dialysis patients with different kind of vascular access.

Methods: 214 chronic dialysis patients, 120 males, 94 females, aged 64±15 (23-95) years being on chronic hemodialysis for 6.6±7.5 (1-36) years, in August 2009 were analyzed. CRP levels from regular month laboratory values from July 2009 were analyzed, and type of vascular access that time was recorded - native arteriovenous fistula (AVF), polytetrafluoroethylene (PTFE) graft or hemodialysis (HD) catheter. Catheter used in our center were temporary single or double lumen, jugular precurved or femoral, all non-cuffed, locked with 30% citrate in interdialysis period.

Results: Vascular access in the majority of patients - 74% (158/214) - was native AVF. 6% (14/214) had PTFE graft and 20% (42/214) had catheter. Average CRP level was 10±14 mg/l with differences between these 3 groups of vascular access. The higher level of CRP was observed in patients with catheters, but clinical manifestations of infection were rare.

Conclusions: CRP levels in chronic hemodialysis patients with native AV fistula and PTFE graft were low and not significantly different. However, patients having hemodialysis catheters had significantly higher CRP level.

Clinical characteristics and CRP levels in chronic dialysis patients with different kind of vascular access

Type of access	AVF (n=158)	PTFE graft (n=14)	Catheter (n=42)
Male gender	95 (60%)	7 (50%)	18 (43%)
Age (years)	62±15	69±12	73±11
Duration of HD (years)	6.6±7.2	10.2±9.7	5.0±7.8
CRP (mg/l)	8.5±12.1	7.9±6.2	18.3±29.8

PP-008 - Epidemiology and Basic Science**Pre and Post Serum Interleukin-6 Levels in Patients with End Stage Renal Disease (ESRD)**

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Objective: To determine the pre and post serum IL-6 levels in patients with ESRD (undergoing hemodialysis).

Introduction: Interleukin-6 (IL-6) is a 22-27 kDa polypeptide secreted from activated monocytes, macrophages, fibroblasts, adipocytes and endothelial cells in response to various stimuli, such as TNF alpha, IL-1, bacterial endo toxins, physical exercise and oxidative stress.

The potential causes of elevated plasma IL-6 levels in end-stage renal disease (ESRD) patients may be related to the loss of kidney function, uremia and dialysis related factors. Even before the initiation of dialysis therapy, patients with decreased renal function already demonstrate signs of inflammation associated with a significant increase in serum cytokine levels.

Method: The study population consisted of 78 patients at Hemodialysis unit, Tehran University Medical School. Aliquots taken from pre-and postdialysis patients. Plasma IL-6 was measured by commercially available highly sensitive ELISA.

Results: Post dialysis IL-6 levels was significantly greater than predialysis levels (14.3 ±4.2 vs 9±3.5 pg/ml, respectively P<0.01)

Conclusion: IL-6, the major mediator of the acute-phase response, is elevated in the plasma of ESRD patients. In addition, reduced renal function, directly or indirectly, seems to be closely related to IL-6 elevation and genetic variations may be of importance.

PP-009 - Hemodialysis, Apheresis, Artificial Organs**Use of Catheters for Vascular Access among Hemodialysis Patients: A Single Center's Experience**

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Introduction-Aim: Vascular access is of prime importance for patients on hemodialysis. We aimed to study early complications of placement of temporary and/or permanent hemodialysis catheters.

Materials-Methods: Patients who were admitted to our clinic between March 2008-May 2009 included to the study. 362 patients were examined the location of the catheter (femoral, jugular, subclavian veins); technique of implantation; acute complications within the first three days like puncture of the artery, bleeding.

Results: Mean age of the patients was 60.6±15.6 years. 275 (%76) of the catheters applied were temporary whereas 87 (%24) were permanent. 225 catheters were applied to internal jugular (190-right, 35-left), 135 were applied to femoral and 7 catheters were implanted to subclavian veins. Puncture of the artery happened in 48 patients (13.3%) during the procedure of which 8 patients (2.2%) had subcutaneous hematoma. No patient had lung trauma and there had been no need for removal of the catheter or a surgical intervention for the complications.

Discussion-Conclusion: Internal jugular vein is the preferred location for catheter insertion as in the present study. Use of hemodialysis catheters are related with high complication rates especially in the long term. Insertion of the catheters by nephrologists may decrease the rate by which subclavian veins are used to international standards.

PP-010 - Hemodialysis, Apheresis, Artificial Organs**Effects of Low Versus High Molecular Heparin on Pruritus in Haemodialysis Patients**

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Background: Pruritus is a very common symptom among patients in haemodialysis (HD). There are a lot of identified and unidentified etiologic factors as calcium/phosphorus balance, uraemic toxins, exposures to medications and HD membranes etc. One of the assumed causes of pruritus is standard heparin with high-molecular mucopolysaccharide structure.

Aim: To show the possibility of pruritus reduction by substitution of standard with fractionated low-molecular weight heparin (FLMWH).

Methods: We examined 30 patients with pruritus (11/19 F/M), average 45y. We applied FLMWH for covering HD sessions and followed them up to six months.

Results: Among 100 patients treated regularly, 30 (30%), complained on pruritus. Trying to exclude high-molecular weight heparin as a risk faktor, we transferred them to FLMWH. The dose required was 3000 IU at the beginning of HD opposed to standard treatment with 2500 IU initially followed by 3X1000 hourly. The first effects were recognized during the first week. Pruritus was diminished in 5 patients (16.6%) and completely disappeared in 6 (20%). The rest of the side-effects (hemorrhagic tendencies) were also reduced.

Conclusion: Among other risk factors causing pruritus in HD patients, heparin plays an important role. In such case FLMWH is a better choice compared to standard heparin

PP-011 - Hemodialysis, Apheresis, Artificial Organs**Real-Time Ultrasonography Guided Placement of Temporary Internal Jugular Vein Catheters: Assessment of Technical Success and Complication Rates in Nephrology Practice**

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Objective: Percutaneous internal jugular venous (IJV) cannulation is often required to place temporary dialysis catheters. Use of ultrasound guidance has reduced the complication rates of this procedure. We evaluate the success and complication rates of real-time ultrasound (RTU)-guided IJV catheterization in normal and high-risk patients.

Method: We prospectively analyzed 93 patients (54 male, 39 female) who underwent IJV cannulation with RTU guidance. The number of needle punctures, technical success, and complications were recorded. Patients with the history of multiple catheterization, disorder of haemostasis, skeletal deformity, poor compliance, and very obese patients were regarded as high-risk group. Complications were defined as carotid artery puncture, pneumothorax, haemothorax, irritation to the brachial plexus, hematoma.

Findings: Of the 93 catheters, 37 (39.8%) were placed in high-risk patients. Cannulation of IJV was achieved in all patients (100%). Average number of puncture was 1.32 (range, 1-4). IJV was entered on the first attempt in 71 (76.3%) of patients. Only two complications (2/93, 2.1%) developed; one in normal-risk group, and one in high-risk group.

Conclusion: Cannulation of IJV under the guidance of RTU is very safe with high technical success rates. Nephrologists can use this technique with ease and with minimal complications in normal and high-risk patients.

PP-012 - Hemodialysis, Apheresis, Artificial Organs**Is There any Association between Depression and Hemodialysis Patients Hospitalization?**

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Introduction: Depression is the most frequent psychological problem in dialysis patients and recently we concluded that high Beck Depression Inventory (BDI) score is one of the best predictor of dialysis patients mortality.

Objective: Finding any association between depression and hemodialysis patients hospitalization.

Methods: This single center prospective study included 78 patients on long-term hemodialysis and the patients were observed for 40 months. Screening of depression was done using BDI questionnaire and cut-point for depression was BDI score >14. Time to the first hospitalization (months), number of hospitalization and overall hospital days were determined as well as clinic, anthropometric, laboratory and chronic inflammation parameters, Index of Coexistent Disease (ICED). Outcome analysis for the first hospitalization was done using Cox regression analysis.

Findings: Forty seven patients were hospitalized for 10-20 days. Correlation between BDI score and number of hospital days was significant ($p=0.45$; $p<0.01$). Potential predictors for hospitalization were ICED, ischemic heart disease, interleukin 6 (IL-6), and percentage of body fat and multivariate Cox regression revealed IL-6 and percentage of body fat as a most powerful predictors of hospitalization.

Conclusion: Although screening of depression could not identify hemodialysis patients with increased risk for hospitalization, higher BDI score was associated with higher hospital duration.

PP-013 - Hemodialysis, Apheresis, Artificial Organs**Dry Weight Adaptation by Ultrasound Measurement of the Inferior Vena Cava in Hemodialysis Patients**

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Purpose: Optimal maintenance of effective blood volume is a challenging aspect of dialysis. Ultrasound measurement of inferior vena cava diameter (IVCD) has been proposed to estimate DW in hemodialysis patients; the aim of this study is to assess this method in our patients.

Methods: In 70 hemodialysis patients IVCD was measured pre and postdialysis; adjusted for body surface area was expressed as IVCD index (IVCDi); inferior vena cava collapsibility index (IVCCI) was calculated postdialysis. In 33 patients, DW was adjusted serially according to IVCD.

Results: Predialysis, one patient was hypovolemic judging by IVCDi, 13 euvolemic and 56 hypervolemic; all patients were above DW. We found a direct correlation between UFV and predialysis IVCDi ($R=0.242$, $p=0.0421$) as well as change in IVCDi during dialysis ($R=0.371$, $p=0.0015$). Postdialysis all patients were within 0.5kg of DW; 20 were hypovolemic, 14 normovolemic and 36 still hypervolemic judged from postdialysis IVCDi. 12(17.1%) of patients experienced cramping or hypotension; patients that were normovolemic predialysis or hypovolemic postdialysis experienced more events than those hypervolemic (28.6% vs.14.3% and 42.9% vs.12.9% respectively). We adapted DW in 33 patients (25 still overhydrated postdialysis) according to IVC at 3 and 6 months. This resulted in increase of postdialysis IVCCI from $18.9\pm 12.3\%$ to $29.2\pm 13.6\%$ at 3 months and $42.7\pm 21.1\%$ at 6 months ($p<0.05$); only 12 patients remained overhydrated postdialysis.

Conclusions: Ultrasound measurement of IVCD is a feasible method for better assessment and periodic adaptation of DW in hemodialysis patients. We found differences between clinically-based estimation of hydration state and the one based on IVCD.

PP-014 - Hemodialysis, Apheresis, Artificial Organs**Carotid Artery –Intima Media Thickness Relationship to Cardiovascular Risk Factors in Chronic Hemodialysis Patients**

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The aim of this study is to investigate the relationship between CCA-IMT and established cardiovascular risk factors in chronic hemodialysis patients: Left and right CCA-IMT were measured by using B-mode ultrasonography. Plaque occurrence in carotid artery was also determined. Cardiovascular risk factors and other variables were assessed. 67 patients 45M/22F with mean age 53.3 ± 10.8 and time on dialysis 58.8 ± 27.4 months were enrolled in this study. The mean IMT value was 0.81 ± 0.11 ranged between 0.6 to 1.2mm. 56.7% of patients had plaques where 46.2% of patients had multiple plaques (plaque score >2).

IMT values correlated with age ($r=0.539$ $p<0.0001$), LDL ($r=0.307$ $p<0.003$), SBP ($r=0.405$ $p<0.0001$) and time on dialysis ($r=0.315$ $p<0.002$). Plaque occurrence related to age ($r=0.514$ $p<0.0001$), total cholesterol ($r=0.346$ $p<0.0001$), LDL ($r=0.358$ $p<0.0001$), triglycerides ($r=0.387$ $p<0.0001$). Patient with plaque score > 2 were older (57.15 ± 6.9 vs 34.15 ± 8.7 $p<0.05$) and had significantly higher LDLC levels (166.6 ± 13.9 vs 126 ± 10.7 $p<0.05$) compared with those with plaque score <2.

In multivariate regression analysis the only independent risk factors in IMT were age and SBP. CCA-IMT is correlated with age and SBP too.

PP-015 - Hemodialysis, Apheresis, Artificial Organs**Is There Association between Thrombosis of Arterio-Venous Fistula and the Type of Arterial Calcification in Hemodialysis Patients**

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The aim of investigation was to assess association between the type of arterial calcifications (AC) and number of previous arterio-venous fistula thrombosis (AVFT) in hemodialysis patients (HDP).

We compared the presences of arterial intima (AIC) and arterial media (AMC) calcifications (detected on plain radiograms of the pelvis) among the 132 HDP (78 men; mean age 54.7 ± 12.8 years) arbitrarily divided in groups according to the number (>3; 1-3; zero) of previous AVFT.

Patients with >3 AVFT had significantly ($p<0.05$) higher percentage of AIC (73.5%) in comparison with patients with 1-3 AVFT (30.8%) and patients without previous AVFT (13.1%). Patients with 1-3 AVFT compared to those without previous AVFT had significantly higher presence of AIC (30.8 vs 13.1%) and AMC (63.4% vs 23.8%). Patients without previous AVFT had significantly higher percentages (63.1%) of radiograms with absence of AC in comparison with the patients with 1-3 AVFT (5.8%) and patients with >3 previous AVFT (0%). There was no statistical difference in frequency of AMC between the groups of patients having >3 (26.5%) and without (23.8%) previous AVFT.

Conclusion: The presence of both AIC and AMC detected on plain radiograms of the pelvis are significantly associated with occurrence of AVFT in our HDP.

PP-016 - Hemodialysis, Apheresis, Artificial Organs

Are Vascular Calcifications More Prevalent in Hypo versus Hyperparathyroidism

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Objective: The aim of our study was to compare the findings of vascular calcifications (VC) on plain radiographs in patients with hypo versus hyperparathyroidism.

Methods: We analysed 100 dialysis patients, in one year period, mean age 58.8±14.0 (24-86), 60 male, mean dialysis duration 7.5±4.8 (1-15). Ca carbonate, vit. D and calcium dialysate concentration (1.25-1.75 mmol/l) were used according to the routine clinical practice. Lateral lumbar radiograph of abdominal aorta was obtained to detect VC. The levels of Ca, phosphate, CaXp and PTH were analysed according to KDOQI guidelines. Number of episodes (<5 vs >5) out of the proposed range for Ca and phosphate was evaluated and patients were divided accordingly. As for PTH, the patients were divided in three groups: 150-300 pg/ml, >300 pg/ml, <150 pg/ml.

Findings: Aortic calcifications were detected in 65 patients. PTH level in range was found in 24(9- VC); PTH>300 pg/ml was found in 38 (23-VC); and PTH<150 pg/ml in 38(26-VC). Values out of range on > 5 occasions were as follow: iP in 46 patients (46%), 33 with VC, hyperfosfatemia 24 (17-VC), hypofosfatemia in 22 (16-VC); Calcium in 59 (59%) (39-VC). In 17 out of 59, PTH<150 pg/ml, in in 31>300 pg/ml. Eleven of 59 with hypercalcemia had PTH 150-300 pg/m PTH 150-300 pg/ml in 24 (9-VC). PTH>300 pg/ml in 38 (23-VC). PTH <150 pg/ml in 38 (26-VC). CaXp out of range in 17 (14-VC).

Conclusion: there was no significant difference in the number of patients and VC findings between hypo versus hyperparathyroid group.

PP-017 - Hemodialysis, Apheresis, Artificial Organs

Relationship between Depression and Proinflammatory Cytokine Levels in Hemodialysis Patients

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Aim: To investigate the relationship between depression and proinflammatory cytokine levels in hemodialysis patients.

Methods: The study included 40 hemodialysis and 20 healthy controls. Blood samples were taken before and after antidepressant treatment for interleukin-1 (IL-1), IL-6, and tumor necrosis factor alpha (TNF-α) levels. All patients were psychologically evaluated. The depressive patients received antidepressant for 8 weeks.

Results: Nine (22.5%) of 40 hemodialysis patients had depressive disorder. Table 1 shows results of psychometric tests and cytokine levels in hemodialysis patients and controls. Table 2 summarizes cytokine levels in hemodialysis patients with and without depression. No significant difference was determined between patients with and without depression for cytokine levels. In the depressive patients, we observe no significant difference in cytokine levels after antidepressant treatment. The psychometric measurements of the depressive patients decreased significantly after antidepressant treatment [Beck Depression Inventory (22.33 ±5.6 vs. 15.00 ± 4.4 p=0.008), Hamilton Depression Rating Scale (17.56 ± 8.7 vs. 11.78 ± 7.9, p=0.024), Hamilton Anxiety Rating Scale (8.78 ± 4.4 vs. 4.67 ± 2.8, p=0.020)].

Conclusion: Depression has no significant effects on proinflammatory cytokine levels in hemodialysis patients. We also observe no important improvement on cytokine levels after antidepressant therapy.

PP-017

Table 1: Results of psychometric tests and proinflammatory cytokine levels in hemodialysis patients and controls

	Controls n:20 Mean ± S.D (min-max)	Hemodialysis patients n:40 Mean ± S.D (min-max)
Tumor necrosis factor-alpha*	53.05 ± 181.91 (0.00-800.00)	191.15 ± 294.66 (0.00-800.00)
Interleukin-1*	41.25 ± 117.94 (0.00-500.00)	167.75 ± 210.98 (0.00-500.00)
Interleukin-6*	29.00 ± 63.54 (0.00-200.00)	140.15 ± 82.74 (2.00-200.00)
Beck Depression Inventory *	5.15 ± 2.6 (1-12)	10.65 ± 7.9 (0-32)
Hamilton Depression Rating Scale *	3.60 ± 2.7 (1-12)	7.67 ± 7.2 (0-30)
Hamilton Anxiety Rating Scale *	1.80 ± 1.7 (0-6)	4.85 ± 3.9 (0-17)

* p< 0.05

Table 2: Proinflammatory cytokine levels in hemodialysis patients with and without depressive disorder

	Non depressive n:30 Mean ± S.D (min-max)	Depressive n:9	Depressive n:9
		Mean ± S.D (min-max)	Mean ± S.D (min-max)
		Before treatment	After treatment
Tumor necrosis factor-alpha**	214.94 ± 303.69 (0.00-800.00)	109.22 ± 260.15 (0.00-800.00)	56.56 ± 162.61 (0.00-490.00)
Interleukin-1**	177.00 ± 222.79 (0.00-500.00)	135.89 ± 171.46 (0.00-500.00)	127.11 ± 216.27 (0.00-500.00)
Interleukin-6**	139.09 ± 83.25 (2.00-200.00)	143.78 ± 85.84 (3.00-200.00)	54.63 ± 83.71 (3.50-200.00)

** p> 0.05

PP-018 - Hemodialysis, Apheresis, Artificial Organs

Effects of Potassium on Nerve Conduction Studies (NCS) Parameters in Hemodialysis Patients

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Introduction: Nerve excitability studies showed that potassium is a very important parameter in pathophysiology of polyneuropathy of hemodialysis patients.

Objective: In order to study effects of potassium on NCS parameters in patients with current dialysis therapy, the post hoc analysis of prospective observation study was performed.

Method: We studied all conventional NCS parameters (motor conduction velocity (MCV), terminal latency (TL), amplitude of compound muscle action potential (CMAP) and F-wave latency (FWL) of the peroneal nerve and sensory conduction velocity (SCV) and amplitude of sensory nerve action potential (SNAP) of the sural nerve) in 34 nondiabetic patients (11 men and 23 women) with Kt/V>1.2. Clinical and laboratory parameters (including potassium) were analyzed.

Findings: MCV and SCV were significantly lower in men (t-test, p<0.01). There was significant correlation between SNAP amplitude and potassium level and no significant correlations between other analyzed NCS parameters, neither with usually measured laboratory parameters nor with clinical parameters. Linear regression revealed that potassium level was related to SNAP amplitude (p<0.01; R2=0.22) and gender was related to MCV and SCV (p<0.01; R2<0.26).

Conclusion: Potassium level was related only to SNAP amplitude in well dialyzed patients so polyneuropathy could hardly be completely explained by changes of only this parameter.

PP-019 - Hemodialysis, Apheresis, Artificial Organs**Seven Members of the Same Family in Kosovo with Alport Syndrome**

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Introduction: The aim of this study was to observe and analyse the main clinical and histopathological characteristics of this syndrome in a single affected family observed for the first time in Kosovo.

Methods: We analyzed seven members of the same family living in Kosovo. Diagnosis was confirmed also by renal biopsy with main changes seen in basal membrane.

Results: Both parents were not affected by AS. Three out of 4 males were affected by AS, two of them died and the third is in chronic hemodialysis. From 6 females only one was affected by AS and is in chronic hemodialysis. Two brothers and one daughter were affected by AS. The daughter and one brother conducted renal transplantation. In all affected members, 3 macro signs of AS were present. Microhematuria and proteinuria were present in all members while a female had macrohematuria with epistaxis and trombocitopenia. Hearing impairment had all members affected by AS starting from early childhood. Eye problems were present in all members. All members had arterial hypertension.

Conclusions: All affected members of a single family had all classical symptoms and signs of Alport syndrome in kidney, eye and hearing problems. Males were affected more frequently.

PP-020 - Hemodialysis, Apheresis, Artificial Organs**Cardiovascular Complications in Patients with Diabetic Nephropathy in Pre-Dialysis Period and on Hemodialysis**

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Introduction: Diabetic nephropathy is major complication of diabetes mellitus and one of the main causes of renal replacement therapy.

Aim: The aim of the study was to evaluate risk factors for cardiovascular disease in pre-dialysis and hemodialysis diabetic patients.

Patients and Methods: Study included 2 groups of patients. Group 1 had 57 diabetics in pre-dialysis period and group 2 had 30 diabetic hemodialysis patients. Laboratory findings with arterial blood pressure, ultrasound cardiography, and history of CHF were evaluated.

Results: The mean age was 63,16 ± 10,813 years. 43 patients (49,4%) were females and 44 (50,6%) were males. Pre-dialysis group had higher mean HbA1C (7,3% vs. 6,7%, p<0,001). Hemodialysis group had lower mean Hgb (108,9 vs. 128,93 g/L, p<0,001) and Fe (12,128 vs. 13,143 µmol/L). The mean levels of ferritin were significantly higher in dialysis group (583,29 vs. 74,8971 ng/ml, p<0,001). There was significant positive correlation between hemodialysis duration and BNP, CRP and cholesterol. Arterial hypertension was found in over 80% of patients in both groups and 65% of on hemodialysis had left ventricular hypertrophy.

Conclusion: The risk factors for cardiovascular complications are greater in hemodialysis patients. Hemodialysis itself increases the frequency of cardiovascular complications.

PP-021 - Hemodialysis, Apheresis, Artificial Organs**The Evaluation of Patients Treated by Hemodialysis for the First Time: One Year Experience of Single Center**

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HD is the most used renal replacement therapy, and has a high complication rate under acute conditions. In this study we aimed to evaluate the etiologic, demographic, and biochemical parameters and the prognosis of patients who needed first dialysis in our center.

The study was designed as a retrospective, cross-sectional study. We evaluated 170 patients (68F, mean age 58, 7±18 years) who were dialysed for the first time during 2008. Patients were divided into two groups according to being acute (group 1: ARF) or chronic (group 2: CRF) renal failure.

Fifty-six of 170 patients (18F, mean age 58,4±16, 9 years) had ARF and 114 patients (50F, mean age 58, 8±18, 6 years) had CRF. Various parameters of patients and etiology of renal failure in both groups were shown table1 and 2. There was statistically significant difference in serum potassium, parathormone, and CRP levels between two groups. Femoral catheterization was the most common vascular access in both groups. The major dialysis indications were uremia, hyperkalemia, and hypervolemia. In group 2, 48.8% of patients were not aware of their illness until the dialysis started. In evaluation of current status, 50% of acute renal failure patients were died, 35% were alive with normal renal function, 12,5% were undergoing dialysis treatment, and 2,5% treated by transplantation. Among chronic patients mortality rate was 16,9%, 72% of patients were undergoing HD, 6,7% on PD, and 4,5% of patients had transplantation.

In conclusion, although most of the patients had CRF, about half were not aware of their illness, while only small portion of patients who were aware had a fistula. Acute renal failure had still higher mortality rate than chronic patients.

Table 1: Demographic, laboratory parameters of patients.

	Group 1	Group 2	p
Age (years)	58,4±16,9	58,8± 18,6	NS
Gender (F/M)	18/38	50/64	NS
urea (mg/dl)	244±84	229± 101	NS
Creatinine (mg/dl)	9,2±4,4	9,1±4,3	NS
Calcium(mg/dl)	8,3±1,2	8,1±1,2	NS
Potassium(mEq/L)	5,5±1,3	4,8±1,2	0,003
Phosphorus (mg/dl)	5,9±1,8	6,2±1,6	NS
Parathormon(pg/ml)	192±184	348±368	0,007
Albumin (g/dl)	3,3±0,6	3,2±0,5	NS
CRP(mg/dl)	117±109	56±68	<0,001
Hemoglobin (g/dl)	9,8±2,3	9,4±2,1	NS
Antihypertensive drug	8,9%	25,4%	0,011
HbsAg (+)	5,5%	2,7%	NS
AntiHCV (+)	0%	4,4%	NS

Table 2: The etiology of renal failure

		%
group 1	ATN	38,2
	Prerenal etiology	11,8
	Postrenal etiology	35,3
	Others renal etiology	14,7
group 2	DM	32,9
	HT	25,9
	Cr.Glomerulonephritis	22,4
	Postrenal etiology	9,4
	Cystic renal diseases	5,1
	Others	0,3

PP-022 - Hemodialysis, Apheresis, Artificial Organs

Vascular Calcifications, Morbidity and Mortality in Hemodialysis Patients

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Background: Vascular calcifications (VC) significantly contribute to morbidity and mortality in hemodialysis (HD) patients. The present study was aimed to analyze the influence of VC on cardiovascular morbidity and mortality in HD patients.

Methods: 214 patients aged 59±11.0 years on HD for 6,3±4,5 years were studied. VC was scored based on to plain radiographs and ultrasonography data.

Results: Out of all, only 14% did not display detectable VC. The majority of patients had pronounced (mixed) calcifications (56%). Frequency of isolated intimal and media calcifications was 25% and 5%. Frequency of CV events was significantly higher in patients with VC (p=0.016). Kaplan-Meier analysis showed that mixed intimal and medial calcifications increased risk for death (p=0.05). Serum iPTH > 181 pg/mol, CRP > 4 mg/L and fetuin A < 0.55 g/L increased risk for death (p=0.024,p=0.028,p=0.023). There was no influence of plasma calcium, phosphate, Ca/P product and MGP on survival rate.

Conclusion: Data confirm a high prevalence of VC in HD patients, mostly with a mixed pattern. Patients with mixed calcification have increased mortality risk. Low fetuin-A, high CRP and iPTH were significant predictors of all-cause mortality.

PP-023 - Acute Renal Failure

Cilastatin Prevents Cisplatin-Induced Nephrotoxicity by Reducing Apoptosis and Oxidative Stress

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Objective: Cilastatin is a specific inhibitor of the renal dehydropeptidase I, effective to prevent imipenem renal hydrolysis and toxicity. Renal damage is also an adverse effect of cisplatin-based chemotherapy. We evaluated whether cilastatin can attenuate cisplatin-induced nephrotoxicity in a rat model.

Method: Wistar rats were divided into 4 groups: control, cilastatin-control, cisplatin (5 mg/kg bw, single dose, i.p.), cilastatin-treated cisplatin rats (150 mg/kg, daily, i.p.). Nephrotoxicity was assessed 5 days after cisplatin treatment, by measuring serum creatinine, BUN (blood urea nitrogen), urine volume, proteinuria and renal morphology. Renal oxidative stress and apoptosis was assessed by determining lipid peroxidation (4-hidroxi-2-nonenal 4HNE), H2O2 urinary levels, TUNEL-positive cells and pro-apoptotic mediators (active-caspase 3 and Bax) respectively.

Findings: Cilastatin significantly inhibited the cisplatin-induced increments of serum and urinary biochemical parameters (p<0.05) and improved the renal morphology. Cilastatin also decreased cisplatin-induced apoptosis by reducing caspase 3-activation, Bax and TUNEL-positive cells (p<0.05). Cisplatin injected rats presented higher levels of lipid peroxidation and urinary H2O2. All of these alterations were reduced by cilastatin (p<0.05).

Conclusion: The study shows that cilastatin has a protective effect on cisplatin-induced nephrotoxicity by preventing apoptosis and oxidative stress. Therefore, cilastatin could represent a novel strategy in prevention of cisplatin-induced acute renal injury.

PP-024 - Acute Renal Failure

Macrophages are not the Source of Injurious IL-18 in Ischemic Acute Kidney Injury in Mice

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We previously reported in ischemic acute kidney injury (AKI) in mice that caspase-1-mediated production of interleukin-18 (IL-18) is pathogenic and that macrophage depletion by liposome-encapsulated clodronate (LEC) is protective. Therefore, our aim was to determine whether macrophages are a source of IL-18 in ischemic AKI in mice. On immunofluorescence staining of the outer stripe of outer medulla, the number of macrophages double stained for CD11b

(a macrophage marker) and IL-18 was significantly increased in AKI and significantly decreased by LEC. Adoptive transfer of RAW 264.7 cells, a mouse macrophage line that constitutively express IL-18 mRNA, reversed the functional protection against AKI in both LEC-treated wild-type and caspase-1 deficient mice. To test, whether IL-18 in macrophages is necessary to cause AKI, we adoptively transferred macrophages in which IL-18 was inhibited. Peritoneal macrophages isolated from wild-type mice, IL-18 binding protein transgenic (IL-18 BP Tg) mice and, IL-18 deficient mice were used. IL-18 BP Tg mice overexpress human IL-18 BP and exhibit decreased biologic activity of IL-18. Adoptive transfer of peritoneal macrophages from wild type as well as IL-18 BP Tg and IL-18 deficient mice reversed the functional protection against AKI in LEC treated mice.

In conclusion, IL-18 from adoptive transfer of macrophages is not sufficient to cause ischemic ARF. The present study does not exclude the possibilities that IL-18 can activate macrophage to make other cytokines and chemokine in AKI or that IL-18 causing the injury may be activated in an inflammatory cell other than macrophage.

PP-025 - Clinical Nephrology

The Relationship between Premature Atherosclerosis and Serum Adiponectin and Resistin Levels in Chronic Renal Failure Patients

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Fat tissue secretes a number of adipokines including adiponectin and resistin which are implicated in the pathogenesis of atherosclerosis. Aim was to assess the relationship between premature atherosclerosis and serum adiponectin and resistin levels in patients with chronic renal failure (CRF).

52 patients with stage 3-5 chronic renal failure (35 predialysis + 17 dialysis) and 34 controls were included. Carotid intima-media thickness (IMT) was measured by B-mode ultrasonography. Serum adiponectin and resistin, C-reactive protein (CRP), albumin, insulin resistance (as assessed by HOMA-R) and other metabolic parameters were determined.

Serum adiponectin levels (g/ml) were higher in dialysis and predialysis patients than control patients (33.730; 18.812.7 and 4.92.5, respectively, P=0.0001). Serum resistin levels (ng/ml) were also higher in dialysis and predialysis patients than controls (17.73; 15.53.7 and 8.42.8, respectively, P=0.0001). IMT levels (mm) were higher in dialysis and predialysis patients than control patients (0.750.23; 0.780.24; and 0.480.16, respectively, P=0.0001). In CRF patients, adiponectin levels showed positive correlations with HOMA-R (r=0.28, P=0.044), creatinine (r=0.27, P=0.05) and negative correlation with eGFR (r= -0.29, P=0.034). Resistin levels showed positive correlation with creatinine (r=0.36, P=0.009) and negative correlation with eGFR (r= -0.33, P=0.017). In the analysis of total cohort, IMT showed correlations with age (r=0.62, P=0.0001), creatinine (r=0.29, P=0.006), eGFR (r= -0.54, P=0.0001), adiponectin (r=0.32, P=0.003), resistin (r=0.45, P=0.0001), CRP (r=0.29, P=0.006) and albumin (r= -0.41, P=0.0001).

The associations between the serum adiponectin and resistin levels and carotid IMT may indicate a potential role of these inflammatory cytokines in the pathogenesis of premature atherosclerosis in CRF.

PP-026 - Epidemiology and Basic Science

Malondialdehyde Levels in Patients with Non-Diabetic Nephrotic Syndrome and Its Relationship with the Proinflammatory Cytokines

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Objective: Malondialdehyde (MDA) is a biomarker for oxidative stress and its level can be measured in the systemic circulation. The objective of our study is to determine the MDA levels, the biomarker for oxidative stress and to investigate its relationship with the proinflammatory cytokines in the patients with non-diabetic nephrotic syndrome (NS).

Materials-Methods: Thirty-one patients with non-diabetic NS were included into the study. The mean age was 36,48±19, 27 and 24 of them (77.4%) were male. IL-1, IL-6, TNF-alfa and MDA levels were measured before treatment. The data was compared to the data of 15 healthy control group. IL-1, IL-6 and TNF-alfa levels were measured by using ELISA kits, MDA were detected by photometric method.

Results: IL-1, IL-6 and MDA levels were found to be significantly higher in the group with NS compared to control group (p<0, 01, Table-1). TNF-alfa were not significant even though they were higher in the group with NS (p>0, 05). Also, no significant relationship was detected between MDA levels, TNF-alfa, IL-6 and IL-1 levels of the patients and histopathological diagnoses (p>0, 05). There is a very highly positive significant relationship between proteinuria amount and TNF-alfa levels (p<0, 01, Figure-1).

Conclusion: NS is characterized by high oxidative stress potential and increasing TNF-alfa levels in parallel with increasing proteinuria amounts in addition to various disorders such as hemodynamic disorder, thrombosis and predisposition to infection caused by the disease.

Figure 1: The relationship between proteinuria and TNF-alfa level

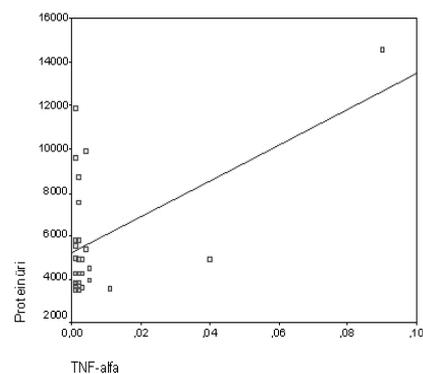


Table-1: The distribution of TNF-alfa, IL-6 and IL-1 and MDA levels according to the groups

	Nephrotic Syndrome (n=31) Ort±SD	Control (n=15) Ort±SD	p
TNF Alfa (ng/ml)	0,006±0,02	0,003±0,001	Z:1,714; p:0,087
IL-6 (ng/ml)	0,26±0,42	0,005±0,002	Z:3,664; p:0,001**
IL-1 (ng/ml)	2,91±3,51	1,08±0,75	t:2,772; p:0,009**
MDA (µM)	10,96±4,27	5,13±1,03	t:7,191; p:0,001**

**p<0.01, Z: Mann Whitney U Test, t: Student t test

PP-027 - Clinical Nephrology

Effect of Combination of Irbesartan and Enalapril on Hypertensive Retinopathy in Patients with Chronic Kidney Disease

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Objective: Aim of this study was to evaluate the effect of combination of irbesartan and enalapril on retinal microvasculature changes in hypertensive patients with stage 2 chronic kidney disease (CKD).

Method: Thirty-five patients (20 males/15 females, age range 45-85 years) with untreated hypertension (systolic blood pressure, SBP>160 mmHg and Diastolic blood pressure, DBP >90 mmHg) and CKD stage 2 (creatinine clearance range 60-80ml/min/1.73m²) received a combination of irbesartan 150 mg/day and enalapril 10mg/day in open label study for 12 months. Measurements of blood pressure, retinal microvasculature using a fundoscopic examination and renal function were evaluated at baseline and at the end of the study.

Results: The combination of irbesartan and enalapril reduced blood pressure (BP) in all patients (BP<=130/80 mmHg p<0.001). Accompanying the reduction in BP, there were an improvement in arteriolar sclerosis and narrowing (p<0.03 and p<0.02 respectively). BP reduction was associated with a significant ameliorate of renal function, mean clearance creatinine 70±5ml/min/1.73m². Moreover, we found out an inverse relation between arteriolar narrowing and left ventricular hypertrophy.

Conclusion: Our study has shown that double antihypertensive treatment can induce regression of retinal microvascular abnormalities associated with reduction of BP. These results should be interpreted with caution because the sample is small.

PP-028 - Clinical Nephrology

Low-Molecular Weight Iron Dextran and Iron Sucrose Have Similar Allergic Profiles in Chronic Kidney Disease Patients

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Aims: Intravenous forms of iron-sucrose and iron-dextran are available in Turkey. We aimed to reveal the allergic potencies of 2 frequently used iron preparations in patient groups with similar characteristics.

Methods: A total of 375 patients were assigned to one of two treatment groups (iron-dextran, n = 177; iron-sucrose, n = 198).

Results: Of the 177 patients who received low-molecular weight iron-dextran, 6 developed adverse reactions (pruritus, 1 patient; chest pain, 1 patient; nausea, 1 patient; hypotension, 1 patient; headache, 2 patients). Of the 198 patients who received iron-sucrose, 5 developed adverse reactions (pruritus, 1 patient; wheezing, 1 patient; nausea, 1 patient; hypotension, 1 patient; headache, 1 patient). Adverse events occurred with similar frequency in the two treatment groups (p >0.05). We administered 1000 mg total-dose infusion of low-molecular weight iron dextran to 60 patients and during treatment, no adverse effect requiring drug cessation was seen.

Conclusions: We conclude that the incidence of adverse reactions associated with iron-dextran was not different than that of iron-sucrose in our study. Although some side effects may occur, the reactions at life-threatening level for both of the drugs are rarely seen. Thus, low molecular weight iron-dextran can be called as a safe and reliable drug.

Characteristics of patients

parameters	LMW Iron-dextran (n=177)	Iron-sucrose (n=198)
Age (yrs)	58,84±14,81	53,3±17,77
Sex(m/f)	102/74	87/110
HD	74	102
CAPD	54	55
Predialytic	49	41
Total dose	2460	2105
HD dose	1213	1313
CAPD dose	695	520
Predialytic dose	552	272

PP-029 - Clinical Nephrology**HX575 Epoetin-Alpha Effectively Maintains Stable Haemoglobin Levels in Patients on Haemodialysis with Symptomatic Anaemia due to Chronic Renal Failure**Matthew Turner¹, Ulrike Hartmann², Frank Dellanna³¹Sandoz International GmbH, Holzkirchen, Germany²HEXAL AG, Holzkirchen, Germany³Private Nephrology Practice, Dusseldorf, Germany

Objective: This prospective, multicentre (n=51) observational study was conducted in Germany to extend the clinical experience with i.v. HX575 epoetin-alfa in patients with anaemia due to chronic renal failure.

Methods: Adult patients (n=326) receiving haemodialysis and with symptomatic anaemia were included. Those receiving other erythropoiesis-stimulating agents for renal anaemia were switched to HX575 epoetin-alpha at the start of the study. Patients were observed for 6 months; efficacy variables included the mean change from baseline in Hb level and HX575 epoetin-alpha dose at 6 months.

Results: 63 patients were already receiving HX575 epoetin-alpha. Mean Hb level increased slightly during the course of the study, from 11.2 g/dL at baseline to 11.54 g/dL at 6 months. Mean dose of HX575 epoetin-alpha also increased slightly, from 7795 IU at baseline to 8246 IU at 6 months. The global efficacy of HX575 epoetin-alpha was rated very good/good by 88.1% of investigators. HX575 epoetin-alpha was well tolerated, and there were no reports of anti-erythropoietin neutralising antibodies.

Conclusions: Treatment with HX575 epoetin-alpha effectively maintains stable Hb levels in patients on haemodialysis and with symptomatic renal anaemia with no dose penalty, and is well tolerated.

PP-030 - Clinical Nephrology**The Sjögren's Syndrome Presented with Renal Tubular Acidosis and Fanconi Syndrome**

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Introduction: Renal involvement of Sjögren's syndrome (SS) is often as interstitial nephritis, renal tubular acidosis and, much more rarely, Fanconi syndrome. Here a SS patient admitted with serious hypopotassemia and hypophosphatemia is presented.

Case: 21 years-old woman with weakness, fatigue, polydipsia and polyuria was admitted. The patient was learned to be hospitalized with the same complains 4 years ago, the etiology was not determined and she was discharged with potassium replacement. Physical examination was normal. In analyses; potassium 2.0 mmol/L, chloride 127 mmol/L, phosphorus 1.6 mg/dL, pH 7.28, HCO₃ 9.5 mmol/L, pCO₂ 20 mmHg, urine pH 8, creatinine clearance 67ml/min, proteinuria 680mg/day. Alkaline phosphatase, vitamin D and parathyroid hormone levels were normal. Polyclonal hypergammaglobulinemia (4.6g/dL) and rheumatoid factor positivity (147IU/ml) were found. Schirmer test was normal, anti-nuclear antibody, anti-Ro and anti-La antibodies were positive. There were no systemic symptoms which could underline SS. Minor salivary gland biopsy revealed prominent lymphocytic infiltrations. These findings supported primary SS. Phosphorus and calcium in the urine were normal, glucose was negative, glutamic acid and citrulline levels were high. Oral potassium, phosphorus and vitamin D were started.

Conclusion: Interstitial nephritis of Sjögren's syndrome is a relatively common complication. Therefore patients should be evaluated in terms of tubular dysfunction and treated accordingly.

PP-031 - Clinical Nephrology**The Measurement of Inferior Vena Cava Diameter for Assessing Volume State in Autosomal Dominant Polycystic Kidney Disease**Alma Idrizi¹, Myftar Barbullushi¹, Mihal Tase², Alketa Koroshi¹, Sulejman Kodra¹, Ahmet Duraku¹, Eriola Likaj¹, Nestor Thereska¹¹Service of Nephrology, UHC Mother Teresa, Tirana, Albania²Service of Internal Medicine, UHC Mother Teresa, Tirana, Albania

Hypertension is an early and frequent manifestation of autosomal dominant polycystic kidney disease (ADPKD). Renal ischemia and increase of plasma volume are the main mechanisms for hypertension in ADPKD. Since the measurement of inferior vena cava diameter (IVCD) by echocardiography has been suggested as a reliable method for evaluation of volume state, particularly in hemodialysis, we undertook a study for assessing the volume state by measurement of IVCD in ADPKD patients.

100 ADPKD pts were divided in two groups: First group of 52 patients without hypertension and second group of 48 patients with hypertension. IVCD was visualized two-dimensionally and measured by doppler-echocardiography. Results are reported as mean±SD. P<0.05 was considered significant.

IVCD in inspiration resulted 9.8±2.3 mm/m² in the first group of normotensive patients, while in the second group of hypertensive patients it resulted 12.4±0.9 mm/m² (p<0.005). In 18 patients of first group, IVCD resulted increased and 13 of these pts developed hypertension after a mean period of 2.4±1.2 years. In conclusion, IVCD could be used as an accurate parameter to assess the volume state in ADPKD pts. On the other hand increased IVCD could be an early predictor of developing hypertension in the future in ADPKD patients.

PP-032 - Clinical Nephrology**The Effects of Renal Replacement Therapies on Serum Levels of Soluble Adhesion Molecules in Patients with End Stage Renal Disease**Zülfükar Yılmaz¹, Sedat Üstündağ², Hasan Kayabaşı³, Ali Kemal Kadiroğlu³, Saniye Şen², Mehmet Emin Yılmaz³¹Dicle University Faculty of Medicine, Department of Internal Medicine, Diyarbakır, Turkey²Trakya University Faculty of Medicine, Department of Nephrology, Diyarbakır, Turkey³Dicle University Faculty of Medicine, Department of Nephrology, Diyarbakır, Turkey

Aim: To compare the effects of dialysis modality, hemodialysis, and continuous peritoneal dialysis, on serum levels of fibrinogen, e-selectin, p-selectin, VWF, PAI, and TPA.

Materials-Methods: Totally 104 (61 on HD, 43 on CAPD) patients undergoing dialysis therapy were evaluated. Fibrinogen, P-selectin, E-selectin, VWF, PAI, and TPA were assayed using commercially available kits. Demographic, biochemical, and hematological parameters of patients were recorded, and data were compared according to dialysis modality.

Results: In demographic, biochemical, and hematological parameters there were no statistically significant difference between groups (p > 0.05). We see that also there were no statistically significant difference in fibrinogen, e-selectin, p-selectin, PAI, and TPA between two groups (p=0,240, p=0,117, p=0,103, p=0,687, p=0,836, respectively), and among CAPD patients levels of VWF were statistically significantly higher than patients undergoing HD (p=0,032).

Conclusion: We did not find any difference between two dialysis modality in effecting of serum soluble adhesion molecules except VWF. Although the serum levels of VWF were higher in CAPD patients, this elevation may not be a determinant of superiority of CAPD to HD in vascular injury, and uremia may be the major determinant of endothelial injury among dialyzed patients, either by HD or by CAPD.

PP-033 - Clinical Nephrology**Use of ACE-Inhibitors and Erythropoietin Responsiveness in Chronic Renal Failure (CRF)**

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The use of ACE-Inhibitors may influence the responsiveness to rHuEpo. We tried to evaluate the effect of ACE-Inhibitors withdrawing on rHuEpo response. We studied 28 patients with CRF (stage 4) who were receiving rHuEpo and ACE-Inhibitors for more than a year. ACE-inhibitors were switched to another antihypertensive drug. It was made the measurement of blood pressure, hematocrit levels and rHuEpo dose at the starting point and at end of the first and second year consecutively.

It was found that hematocrit levels increased from 27.4 +/- 7.2 % to 30.1 +/- 6.8 % at the first year (p<0.05) and to 29.7 +/- 6.4 % at the second year (p<0.05). the mean dose of rHuEpo was decreased from 152.6 +/- 42 UI/kg/week to 134.4 +/- 73 UI/kg/week at the first year (p<0.01) and to 135.6 +/- 64 at the second year (p<0.01). One patient stopped rHuEpo at the end of the first year. We did not observe changes in the mean blood pressure levels. Beyond that we did not find changes of iron status, intact parathyroid hormone and aldosterone level. We conclude that ACE-Inhibitors influence the Hematocrit level in CRF and their withdrawal improve anemia and decrease the need for rHuEpo.

PP-034 - Acute Renal Failure**Acute Renal Failure in Critically ill Patients and Early Predictive Factors**

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Objective: To investigate the outcome and early predictive factors of patients with acute renal failure (ARF) in the intensive care unit (ICU).

Methods: Patients admitted in medical and surgical ICUs from January 2005 to December 2007 were reviewed retrospectively. Patients who met criteria for ARF were identified. Patients on chronic dialysis before admission to the ICU were excluded.

Results: 76 (44 M, 32 F) patients mean age 55,1±18,75, were treated for ARF while in the ICU setting. 85,5% patients had oliguric ARF. Respiratory support occurred in 84,2%, vasopressor support in 52,6%, coma in 38,1%, and comorbid condition was present in 50,0% of patients. Mortality was 52,6%. Recovery of renal function was in 55,3% of patients. Student's t test showed as important factor associated with mortality age (60,4±16,6 vs 49,1±19,3 P=0,008). Multiple logistic regression analysis indicated that respiratory support (OR: 0,028, 95% CI: 0,002- 0,33, p= 0.005), coma (OR: 0,147, 95% CI: 0,028- 0,774, p= 0.024), need for inotropic drugs (OR: 0,101, 95% CI: 0,019- 0,544, p= 0.008), comorbid condition (OR: 0,215, 95% CI: 0,051- 0,916, p= 0.038), were independent risk factors for mortality.

Conclusions: Advanced age, need for respiratory support, inotropic drugs, coma, comorbid condition, were the most important predictive factors.

PP-035 - Clinical Nephrology**Essential Hypertension and the Impact of Morning Rise Blood Pressure on Damage of Target Organs**

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Introduction: The aim of the study is to determinate the impact of morning rise blood pressure on left ventricular hypertrophy, microalbuminuria and renal function in patients with essential hypertension.

Methods and Subjects: The subjects enrolled in this study were 40 patients with primary hypertension. Blood pressure has been measured in the morning, within 30 minutes after awakening, and in the evening, just before going to bed, in the sitting position, with a mercury sphygmomanometer, after a 5-minute rest. Subjects were divided into 2 groups according to the difference of systolic blood pressure between morning and evening (mSBP-eSBP); morning rise group (MR) = mSBP-eSBP 10mmHg (n=20) and non-morning rise group (NMR)=mSBP-eSBP<=10mmHg (n=20).

Results: Patients of the MR group presented a higher left ventricular mass index (142 34 gm/m² vs. 120 21 gm/ m², p<0.001), presented a more significant microalbuminuria (210 65 mg/mL vs. 75 34 mg/mL, p<0001), the difference of serum creatinine between two groups (1 0.23 mg/dl vs. 0.8 0.17 mg/dl) was statistically non-relevant.

Conclusion: These results suggest that morning rise in blood pressure is predictor of left ventricular hypertrophy and microalbuminuria in hypertensive subjects

PP-036 - Clinical Nephrology**The Association of Vitamin D with Proteinuria and Blood Pressure in Patients with Chronic Kidney Disease**

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Background: Proteinuria and hypertension are the risk factors leading to chronic kidney disease. It has been suggested that vitamin D affects urinary protein excretion and blood pressure. The aim of this study was to investigate whether there is an association between vitamin D and proteinuria, systolic and diastolic blood pressures in patients with chronic kidney disease.

Methods: Forty patients (20 males, 20 females) were enrolled in this study. In patients, 24 h urinary protein excretion, and routine biochemical parameters including 1.25(OH)2D3 and 25(OH)D3 were evaluated. All the analysis were conducted using SPSS, Windows version 15.0. P < 0.05 was considered to be significant.

Results: The analysis of data showed that there was no an association between 1.25 (OH) 2D3 level and proteinuria, systolic and diastolic blood pressure (p=0.90, p=0.56, p=0.64; respectively). There was a negative association between 25 (OH) D3 level and proteinuria, but statistically not significant (r=-0.273, p=0.09). There was a positive association between 25 (OH) D3 level and systolic blood pressure, but statistically not significant (r=0.303, p=0.06).

Conclusion: Further prospective studies made in much more patients are needed to determine whether there is an association between vitamin D and proteinuria, systolic and diastolic blood pressures.

PP-037 - Clinical Nephrology

Effects of Lescol on Inflammation in Pre-Dialysis Patients

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Introduction: The aim of the study was to evaluate effects of lescol on C-reactive protein (CRP), as an inflammation predictor, in pre-dialysis patients
Methods and Subjects: In the study were enrolled 56 patients in pre-dialysis. CRP was used as an inflammatory marker and all patients presented baseline CRP levels higher than 10mg/l. 30 patients received lescol 40mg/die/6 months and 26 patients did not received lescol. All the patients were examined for cholesterol, low-density lipoprotein (LDL), high density lipoprotein (HDL) and triglycerides (TG) and also CPR. Blood samples were obtained at baseline, and after 6 months of treatment.
Results: Multiple regression analysis showed that CRP correlated significantly with TG and LDL cholesterol. A significant reduction in cholesterol from 213±30 mg/dl to 190 ±22 mg/dl (6 months) (P<0.03) and LDL from 139±37 mg/dl to 112±25 mg/dl (6 months) (P<0.001) was observed in the patients treated with lescol.
 In the first group, (CRP) decreased from 17.9±2,5mg/l to 11,2 ±2,2 (p<0.001). The patients which did not receive lescol had not significant decrease of cholesterol, LDL and CRP.
Conclusions: These results indicate that lescol has anti-inflammatory effect in pre-dialysis patients, and this may play an important role in the prevention of cardiovascular damage in pre-dialysis patients.

PP-038 - Clinical Nephrology

Ketoacids and Erythropoietin May Influence Progression of Chronic Renal Disease in Pre-Dialysis Patients

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Ketoacids (KA) and epoetin-beta may influence the metabolic status of patients with chronic renal disease in pre-dialysis stage treated with low-protein diets We use three therapeutic protocols the first group low protein (LPD) with diet 0,6gr/dl of protein with recombinant erythropoietin 6000UI /week 40UIkg /week and ketoacids (Ketosteril 12 tab in day) the second group low protein diet 0,6gr/dl and erythropoietin 6000UI /week and third group only (LPD) The study involved 56 patients in the pre-dialytic stage of chronic renal disease with Ccr 20- 35ml/min with sign of renal anemia < 10gr/dl The patients were monitored at the beginning and after 6 months compressed 18 patients Group I compressed 18 patients Group II compressed 20 patients and Group III In the finish of the study decrease in GFR measured as creatinine clearances was significantly lower in group I (P<0,01). At the same time a significant increase in serum albumin, BMI, HDL -cholesterol, triglycerides, were found in Group I (P<0.05). The second group and third group have changes but no significantly.
Conclusion: Co-administration of LPD, epoetin-beta and KA thus constitutes an effective alternative in conservative management of patients in pre-dialysis stage, delaying in follow-up period progression of renal failure corrected of metabolic parameters

PP-039 - Acute Renal Failure

Lactic Acidosis after Concomitant Treatment with Metformin and Tenofovir in a HIV Infected Patient

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Objective: We present a case of lactic acidosis after concomitant administration of tenofovir and metformin.
Method: A 74 year old man with a history of diabetes mellitus receiving treatment with metformin, coronary artery disease and HIV infection treated with emtricitabine, tenofovir and efavirenz came into the hospital due to zoster like abdominal pain, tachypnea, nausea and vomiting. On clinical examination, the patient was feverless, BP was 90/60 mmHg, pulse rate 110/min. The patient was dehydrated, oliguric with no signs of acute abdomen.
Findings: The laboratory tests showed marked lactic acidosis and acute tubular necrosis. The abdominal CT scan revealed edematous pancreas. The patient underwent nine courses of slow continuous hemodiafiltration. Urine output was progressively improved and returned to normal. Serum urea and creatinine values started to fall on the 25th day and renal function returned progressively to normal.
Conclusion: Lactic acidosis was due to the concomitant administration of metformin and tenofovir. Tenofovir can cause acute renal failure and metformin may cause lactic acidosis when renal failure is present. Bicarbonate-buffered continuous venovenous hemodiafiltration (CVVHDF) is superior to conventional intermittent hemodialysis, because it removes both metformin and lactate and corrects acidosis. Moreover, there is no risk of hypernatremia or fluid overload.

PP-040 - Clinical Nephrology

Assessment of the Effects of Imatinib and Propranolol on Liver, Kidney and Blood Homocystein Levels in Rats that Underwent Partial Portal Vein Ligation (PPVL)

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Introduction: We investigated the effects of imatinib and propranolol on liver, kidney and blood homocystein levels in rats that underwent PPVL.
Material and Method: The study was performed on total number of 39 rats divided into 5 subgroups. Group I was Sham-operated. The remaining subgroups that underwent PPVL were as following; Propranolol (GroupII=6), Imatinib+Propranolol (GroupIII=9), Imatinib (GroupIV=11), Control (GroupV=7). Imatinib (50mg/kg/day) and Propranolol (3.5mg/kg/day) were given orally for 15 days. Homocystein levels were obtained from blood, and liver and kidney tissues.
Findings: Group III and IV had lower kidney homocystein levels than groups I,II and V (p<0.001). Group II had lower kidney homocystein levels than groups I and V (p<0.001). The blood homocystein levels in group III were lower than those in other groups (p<0.001). Group V had creatinine levels that were higher than those in groups II, III and IV (p<0.001), while group II had higher creatinine levels than groups III and IV (p<0.05). The creatinine levels in group IV were significantly higher than those in group III (p<0.05).
Conclusion: Concurrent administration of propranolol and imatinib lowers portal hypertension by decreasing homocystein levels more effectively than either drug alone. The increase of serum creatinine levels by propranolol alone is not observed when these drugs are used concurrently.

PP-041 - Clinical Nephrology

A Case of Posterior Reversible Encephalopathy Syndrome (PRES) with Chronic Renal Failure

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Introduction: The posterior reversible encephalopathy syndrome (PRES) is characterized by headache, seizures, altered mental status and visual disturbances. It is a clinical and radiological entity and typically causes the reversible changes in the posterior circulation system of the brain. The most common causes of PRES are hypertensive encephalopathy, eclampsia-preeclampsia, drug intoxications and many metabolic diseases like chronic renal failure (CRF). We present a patient with predialysis CRF and PRES.

Cases: A 16-year-old man with predialysis CRF admitted with headache, confusion and fatigue to emergency clinic. He admitted to nephrology clinic for high creatinine (4.8 mg/dl) and malign hypertension (blood pressure is 230/110 mmHg). Seizure was observed in the patient. That's why, cranial and diffusion magnetic resonance imaging (MRI) were studied and PRES signs (hyperintense lesions were observed on T2A and FLAIR sequence) was seen in the bilateral parieto-occipital region. After the anti-hypertensive, anti-edema and anti-epileptic treatments, all signs of the patient improved at the 3 th day. In addition, all PRES signs of the patient also improved at the 3 th month.

Conclusion: PRES in the patients with CRF was known an uncommon condition. But PRES should be brought to mind, if there is an uremic and/or hypertensive encephalopathy.

Figure 1: Axial T2 MR image show symmetrically located, bilateral hyperintense lesions in the parietooccipital regions affecting the cortex and subcortical itematter.

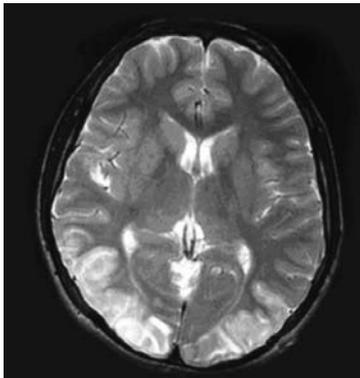
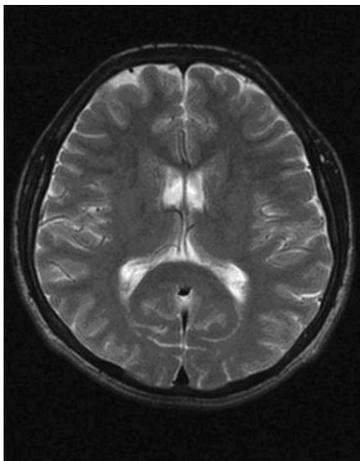


Figure 2: After the treatment (3th month), all of lesions completely disappeared in axial T2 inversion.



PP-042 - Clinical Nephrology

Acute Leukemic Infiltration of Kidneys in a Patient with End-Stage Renal Disease and Uncontrolled Hypertension

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Acute lymphoblastic leukemia (ALL) whereas frequently diagnosed in children also can be seen in adulthood. Patients with T-cell ALL are at a higher risk for extramedullary disease, including renal parenchymal involvement which is the most frequent extramedullary metastatic site. As a consequences of leukemic infiltration of kidneys, asymptomatic bilateral renal enlargement, acute renal failure, and/or hypertension can be seen. We report a patient receiving hemodialysis, facial paralysis, EPO-resistant anemia and uncontrolled hypertension due to leukemic infiltration of kidneys. A 34-year-old man who had ESRD and uncontrolled hypertension was admitted. He was on hemodialysis three times weekly for 2 years. The etiology of kidney failure wasn't known. Two months before admission he had Bell's paralysis. At admission his blood pressure was 210/110 mmHg. Initial biochemistry and blood count revealed BUN: 43 mg/dl, creatinine: 6,88 mg/dl, WBC: 20700/mm³, lym: 12000/mm³, hemoglobin: 9,6 g/dl, Plt: 10000/mm³. Renal ultrasonography showed bilaterally enlarged kidneys without hydronephrosis unlike his previous USG which was determined bilaterally atrophic kidneys. On blood smear atypical lymphocytes were seen and ALL-L2 was diagnosed at flow cytometry test. PVD (Daunorubicin, vincristine and prednol) chemotherapy was initiated. After the first cure his BP dropped under 130/80 mmHg and the renal USG revealed bilaterally atrophic kidney.

PP-043 - Acute Renal Failure

Levetiracetam Induced Rhabdomyolysis and Acute Renal Failure

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Levetiracetam is a novel antiepileptic drug that is effective against a variety of seizure types. It is a pyridoline derivative and generally well tolerated. We report here the first case of rhabdomyolysis and acute renal failure due to levetiracetam. A 38 year old male has been diagnosed as epilepsy for fifteen years, but he didn't use any drug and he had no seizure since the last six years. However, he had experienced an approximately 20 minute lasting seizure 6 days ago and he went to the emergency servise. His physical examination was normal and laboratory findings were as follows: serum urea 29 mg/dL, creatinine 1.7 mg/dL, creatine kinase (CK) 215 U/L. Levetiracetam was started as 500 mg q12 h for epilepsy and patient was discharged. Four days later, he applied to hospital with nausea, vomiting, severe and generalized muscle pain and weakness. On examination, he was pale, exhausted and afebrile. Investigations revealed: serum urea 201 mg/dL, creatinine 14.1 mg/dL, potassium 6.2 mmol/L, phosphour 7.7 mg/dL, CK 659 U/L. There wasn't detected any precipitating factors for rhabdomyolysis. Levetiracetam was discontinued and the patient immediately undergone hemodialysis. On the tenth day of the hospitalization he was discharged because he had completely recovered.

PP-044 - Acute Renal Failure**Acute Renal Failure and Pancytopenia Following Detergent Ingestion**

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Introduction: Anionic detergents were known as low toxicity materials. In the literature, acute renal failure (ARF) secondary to detergent ingestion is a rare condition. In addition, pancytopenia related with detergent ingestion is not reported.

Case: A 44-year-old man with mental retarded admitted to emergency clinic with confusion. He treated with carbamazepine and valproic acid for epilepsy. He was admitted to neurology clinic with postictal confusion. We consulted him with increased anion gap metabolic acidosis. On examination, blood pressure 110/70 mmHg, pulse 85/min, fever 37°C and decreased turgor-tonus. His biochemical values and blood count were normal. Blood levels of carbamazepine and valproic acid were in therapeutic ranges. All of the intoxication panel parameters was negative. Intravenous hydration was performed and haemodialysis applied for severe acidosis. His relatives were said that he had at detergent on the previous day. While patient monitoring, acute renal failure with anuria and pancytopenia were developed. At the same time fever was increased to 38,5°C. Blood count showed neutropenia and febril neutropenia treatment was started urgently. Respiratory support applied for respiratory failure. The patient was applied haemodialysis three times a week during the following period. Although all treatment was applied, the patient died at the 12th day.

Conclusion: ARF, pancytopenia and acidosis secondary to detergent ingestion is a rare condition. Intoxications should be considered in patient with confusion.

PP-045 - Clinical Nephrology**Renal Hemodynamics Parameters (RHP) and Cardiovascular Risk Factors (CRF) in Essential Hypertension (EH)**

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Objective: To analyze correlation of RHP with CRF, BMI and serum uric acid (SUA).

Method: 92 patients with EH, 44 females, and 48 males were examined. Effective renal plasma flow (ERPF), renal blood flow (RBF), renal vascular resistance (RVR) and CRF were done. Using multiple regression analysis (MRA) all examined parameters were analyzed.

Findings: The average levels of examined parameters were within normal limits in both groups. Among the females 4/44 had no provoked hyperuricemia, 8/44 hypertriglyceridemia, 2/44 hypercholesterolemia and 13/44 hyperglycemia. No provoked hyperuricemia had 5/48 among the males, hypertriglyceridemia 20/48, hypercholesterolemia 9/48 and hyperglycemia 19/48. As a single factor SUA showed linear correlation with glucose in females, and inverse with triglycerides in males: (R=0.47, p<0.02; and R=-*0.35, p<0.02). Males demonstrated a correlation of SUA with RVR and inverse with RBF: (R=0.34, p<0.02; R=-*0.34, p<0.02. Using MRA, in females, SUA and BMI, systolic blood pressure, glucose, RBF and RVR showed significant correlation: (R=0.52, p<0.04); and in males: with age, glucose, BMI, ERPF and RBF: (r=0.65, p<0.007).

Conclusion: CRF had an even greater impact on the renal vasculature both, as single factors or clustered. SUA level were depended of the changes of each of the RHP, as a single factor.

PP-046 - Clinical Nephrology**Erythropoietin Treatment in Systemic Disorders**

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Background: Haemolytic and renal anaemia due to autoimmune pathology and renal organ involvement respectively are found in some patients with systemic lupus erythematosus (SLE), but do not precisely explain the high incidence of anaemia in SLE. We want to present our experience with EPO treatment in patients with systemic diseases, in clinically stable phase of the disease on maintenance therapy.

Patient selection: 4 patients, 2 female and 2 male, aged 37,2+10,1, three with SLE and one with Wegener's granulomatosis were treated with EPO 4000IU weekly for the 6 months, in the same time with the maintenance immunosuppressive treatment. All patients were in the initial phase of uraemia with serum creatinine 251,5+23,8 micromol/l, and with severe anaemia: Hb 69,7+3,8g/l.

Results: After 6 months EPO treatment they presented complete recovery from anaemia and significant improvement of renal function, which was not achieved with only immunosuppression. Serum creatinine levels were 136+12,1 micromol/l after 6 months EPO treatment.

Conclusion: We presented only few cases, but we can say that EPO treatment may improve anaemia in systemic disorders, before end-stage renal disease and also improve renal function.

PP-047 - Clinical Nephrology**Mircera as an Initial Therapy of Anemia in Predialysis Patients with Chronic Renal Failure**

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Mircera is a continuous erythropoietin receptor activator, that has been developed for the treatment of anemia in patients with chronic kidney diseases. The aim of the study was to evaluate the efficacy of Mircera as an initial therapy of the anemia in predialysis patients with chronic renal failure. Nine patients were treated with the drug, that was been applied once monthly, s.c for 10 months. The patients were not treated before with erythropoiesis stimulating agents. The initial serum creatinine was 387±96 µmol/l and creatinine clearance was 38±16,4 ml/min/1.73m². Hemoglobin level before therapy was 95,33±16 g/l and increased up to 116,8±15 g/l. Mean dose of Mircera was 85,49 +/-23,86 µg monthly. No adverse effects during the treatment were observed. We concluded that continuous erythropoietin receptor activator Mircera corrects anemia at extended administration intervals in patients with chronic kidney disease not on dialysis. That treatment slowly increases hemoglobin up to the target values. The treatment is safe and well tolerated

PP-048 - Renal Transplantation**Impact of First Day Urine Volume on Graft Survival in Renal Transplant Recipients**

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Introduction: Delayed graft function might be associated with decreased graft survival. Daily urine volume is a predicting factor for graft survival in renal transplant (RTX) recipients. We investigated impact of daily urine volume on graft survival in RTX recipients

Patients and Methods: We included demographic and clinical data of 212 RTX recipients, and evaluated first day urine volume of patients. The patients were divided in two groups according to donor type (Group 1: living-related, Group 2: cadaveric related). Each patients in Group 1 and 2 were divided again into two group according to daily urine output (UO) below or above mean UO. Group 1 was divided into two groups: UO above mean daily UO: Group 3 and UO below mean daily UO: Group 4. Group 2 was also divided as in group 1 into two groups according to UO Group 5 and Group 6: we compared five years graft survival between groups.

Results: Mean daily UO in Group 1 (n=126) and Group 2 (n=86) was 5740±1978 ml and 4339±2133 ml, respectively. Five years graft survival in Group 3 was better than Group 4 (83% vs 50%, p=0.013) and also five years graft survival in Group 5 was better than Group 6 (93% vs 67%, p=0.01).

Conclusion: This study shows that RTX patients with high UO in the first day of operation had better graft survival than patients with lower UO. High UO at post-operative first day in clinic might be an important predictor for the long term graft survival.

PP-049 - Renal Transplantation**Proteinuria in Patients on Sirolimus-Based Therapy after Cyclosporine Withdrawal in Stable Transplant Recipients**

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Background: Prolonged calcineurin inhibition with cyclosporine (CsA) for prevention of acute rejection is associated with increased nephrotoxicity which may contribute to chronic allograft nephropathy. Sirolimus (SRL) is new immunosuppressant without acute or chronic nephrotoxicity. The occurrence of proteinuria after SRL conversion was disturbing observation. We designed study to determine whether conversion of stable renal transplant recipients from CsA-MMF-ST based regimen to SRL-MMF-ST regimen is safe and beneficial.

Materials and Methods: We switched 12 patients who had to be at least 4 years posttransplantation with stable serum creatinine below 250 µmol/L. Twelve-month results are presented.

Results: Patients achieved stable SRL doses of 4 mg/day with a mean trough level of 9.75±2.02 ng/ml as soon as 1 month after conversion. Overall graft survival at 12 months was 100%. There are no patients suffered from acute rejection after SRL conversion. There was no significant change in pattern of proteinuria at 3,6 and 9 months postconversion.

Conclusion: Present study supports efficacy and safety of conversion from CsA to SRL in stable transplant recipients with low immunological risk. We did not observed change in the pattern of proteinuria.

PP-050 - Renal Transplantation**Valaciclovir Prophylaxis for the Prevention of Cytomegalovirus Disease in Kidney Recipients Undergoing Anti-Lymphocyte Globulin Treatment**

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Introduction: Cytomegalovirus (CMV) infection is an important cause of mortality and morbidity after solid organ transplantation. Patients who receive anti-lymphocyte globulin have a higher incidence of CMV. In this study, we report our experience with valaciclovir prophylaxis to prevent CMV infection in patients undergoing anti-lymphocyte globulin treatment for acute rejection (AR).

Patients and Methods: This is a retrospective study of renal transplant recipients who received anti-thymocyte globulin (ATG, Fresenius) for AR at the Akdeniz University Transplant Centre between September 2006 and December 2007. All the patients were CMV sero-positive and living donor transplants. The study group (ATG + valaciclovir) consisted of 15 patients who did not receive preemptive intravenous ganciclovir which was not available during that period in Turkey. These patients were given valaciclovir prophylaxis of up to 3-4 g/day, adjusted to creatinine clearance. Twenty-seven patients who had similar demographic characteristics and who received preemptive intravenous ganciclovir therapy were chosen as the control group (ATG + ganciclovir). All recipients underwent CMV surveillance using quantitative CMV DNA.

Results: Both groups were similar in terms of age, gender ratio, HLA mismatches, induction therapy, immunosuppressive regimens. There was no CMV disease or mortality in both groups. For the study and control groups, graft survival rates were %80 and %88 at one year respectively. The difference was not statistically significant.

Conclusion: Valaciclovir prophylaxis in CMV sero-positive renal transplant recipients receiving anti-lymphocyte globulin decreases CMV infection significantly as previously reported.

PP-051 - Renal Transplantation**Detection of Antimicrobial Susceptibility and Extended Spectrum Beta-Lactamase Production in Urine Culture Isolates of E. Coli and Klebsiella Spp from Renal Transplant Patients**

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The most common site of infection in renal transplant recipients is the urinary tract. Today, surgical complications have decreased in frequency but urosepsis still is an important problem. Urinary system infections caused by ESBL (extended spectrum beta-lactamases) producing bacteria may complicate the therapy.

In this study we aimed to determine ESBL producing strains of E. coli and Klebsiella spp from urine cultures in renal transplant patients and to evaluate antimicrobial susceptibilities of the isolates to ciprofloxacin, amoxicillin-clavulanate, piperacillin-tazobactam, trimethoprim-sulfamethoxazole, fosfomicin and nitrofurantoin.

Materials and Methods: Between January 2008 and January 2009, ESBL production was investigated using combined disk method and BD Phoenix automated system in urine cultures isolates of E. coli and Klebsiella spp from renal transplant patients in Akdeniz University Central Laboratory.

Results: A total of 118 strain of which 97 were E. coli and 21 were Klebsiella spp were investigated. Thirty-six of E. coli strains and four of Klebsiella spp were ESBL producers. Susceptibility rates of ESBL producing E. coli strains were found as follows: 18.92% for ciprofloxacin, 5.41% for amoxicillin-clavulanate, 64.86% for piperacillin-tazobactam, 10.81% for trimethoprim-sulfamethoxazole 100% for fosfomicin and nitrofurantoin.

Conclusion: The laboratory's ability to detect and report the presence of ESBLs will provide the selection of appropriate therapy for patients infected with ESBL-producing strains.

PP-052 - Renal Transplantation

Comparison of Sirolimus (Srl) – Cyclosporine (Csa) Combination with Sirolimus-Tacrolimus (Tac) in Renal Recipients

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Introduction: In this study, we aimed to compare cyclosporine versus tacrolimus in renal transplant (RTX) patients on sirolimus based immunosuppressive regimen in terms of acute rejection rates, graft and patient survivals.

Patients and Methods: This study was conducted on 138 RTX patients on sirolimus based immunosuppressive regimens. Based on our immunosuppressive protocol, CNI (Target C-2 level: 1400-1300 ng/ml at first month for CSA and through blood level for TAC: 10-12 ng/ml at first month), mycophenolate mofetil + steroids was introduced one day before RTX operation, and sirolimus was added to this regime at the fifth day of post-transplantation with a withdrawal of mycophenolate mofetil. Until the third month, CSA or TAC combination with sirolimus were continued, and at the end of the third month of post-transplant period, CSA and TAC were withdrawn with a addition of mycophenolate mofetil. Then, patients on sirolimus, mycophenolate mofetil and steroid was randomly divided into two groups: Group 1: SRL+ CSA (n=94) and Group 2: SRL+ TAC (n=44). The first year results were analyzed retrospectively.

Results: The demographics of the groups were similar in terms of response to rejection treatment, drug toxicity, lymphocele development, CMV infection, urinary tract infection, Acute rejection rate (20% vs 18%) and patient survival (97.8% vs 100%) were also similar. New onset post transplant diabetes mellitus rate (6,4% vs 13,6%, p:0,160) was similar. Although GFR was better in TAC group at the end of the first month (68,5±34,2 vs 79,6±30,8, p:0.068), the difference was not found at 6 month and 1 year. Blood lipid levels, proteinuria, hemoglobin were similar.

Conclusion: m-TOR agents were similar clinically. The only difference was on renal function at first month which is not a determinant on clinical efficacy.

PP-053 - Renal Transplantation

The Outcome of Spousal Renal Transplantation

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Introduction: Spousal donors were increasingly being used for renal transplantation (RTX) because of the shortage of deceased kidney donor. It has been claimed that male recipients of grafts from female donors have a higher incidence of acute rejection episodes and reduced survival. We aimed to evaluate and compare the outcome of spousal donor transplant recipients with respect to donor sex.

Material and Methods: We included 70 spousal RTX patients and divided patients into two group according to donor sex (Group 1: female patients who received kidney from her husband, Group 2: male patients who received kidney from his wife). We compared acute rejection rate and graft survival between two group.

Results: The mean age in Group 1 (n=18) and Group 2 (n=52) was 43± 7,9 and 44± 8,5. Both group was similar with respect to HLA mismatch, immunosuppressive type and age. Acute rejection rate in was 38% and 26%, respectively (p>.05) and graft survival in Group 1 and 2 was 75% and 88 % (p>.05) at 5 years (Kaplan-Meier).

Discussion: This study shows that donor sex might not be an important factor regarding to acute rejection and graft survival in spousal renal transplantation.

PP-054 - Renal Transplantation

A Reasonable Alternative for ABO Incompatible and Cross Match Positive Recipients: Donor Exchange Program

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Introduction: The increase in gap between recipient and donor number is a major drive for living donation. ABO incompatibility and (+) donor cross match (CM) is a limiting factor for transplantation. As a solution for this limitation, donor exchange programs are cost effective

Method: Between October 2005 and June 2009, twenty four (16 male, 8 female) out of 1221 renal transplant were performed by donor exchange program. All patients were included for ABO incompatibility. ABO compatible and CM (-) donors and recipients were paired each other.

Findings: Findings were shown in Table 1. All patients were given CNI including triple immunosuppressive regimens. Patients who have 3 and more HLA mismatch were given induction therapy with basiliximab. One patient developed lung infection as a major complication. The other complications are listed as one acute rejection, three delayed graft function, one primary nonfunction.

Results: The results of donor exchange programs were cost effective and acceptable. Comparable early results makes it a reasonable alternative.

Table 1: Findings

Mean Age (yr)	42,5 ± 11,9 (16-65)
Mean Follow up (mo)	14 ± 14 (3-54)
Mean hospital stay (day)	9 ± 7 (5-34)
Mean Cr (mg/dl)	1,5± 1,9
Mean GFR mL/min/1.73	72,4±2,9
Mean HLA mismatch	4,7 ± 1
1 yr graft and pt survival	%95,8 and %100

Cr: Creatinin, GFR: Glomerular filtration rate

PP-055 - Renal Transplantation

Risk Factors for Low Bone Mineral Density in Long-Term Renal Transplant Recipients: A Cross-Sectional and Longitudinal Study

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Objective: To investigate potential risk factors for low bone mineral density (BMD), we performed a cross-sectional and longitudinal study in long-term (>12 months) renal transplant recipients (RTR).

Method: BMD was measured at lumbar spine (LS) and hip (FN) by DEXA in 72 RTR, 83 months post-transplant (median).

Findings: Selected parameters of the study population are shown in Table 1. Osteoporosis was diagnosed in 45%. Women had lower BMD than men. 87% of postmenopausal women were osteoporotic compared with 30% of menstruating. Osteoporotic patients were older, had longer transplantation time, lower creatinine clearance and lower body weight (BW). Logistic regression analysis showed that advanced age, low body weight and corticosteroid treatment before transplantation significantly increased osteoporosis risk (Table 2). DEXA was repeated in 45 patients after 2 years (median). In those receiving anti-osteoporotic treatment (alendronate or alfacalcidol, 25 in total), BMD was increased at LS, while it worsened in those not. No significant difference was observed at FN.

Conclusion: Osteoporosis is common in long-term RTR. Advanced age, low BW and corticosteroid treatment before transplantation are significant risks for post-transplant osteoporosis. Anti-osteoporotic treatment protects against further bone loss. Patients not receiving treatment should be closely monitored for the occurrence of bone loss.

Table 1

Age (years)	45±13
Male gender (n) (% of patients)	45 (62.5%)
Post-menopausal women (n) (%)	15 (56%)
Cumulative corticosteroid dose (first year) (mg)	5256±1053
Serum creatinine (mg/dl)	1.3±0.3
iPTH (pg/ml) [pre-transplantation]	209±214
iPTH (pg/ml) [post-transplantation]	94±63
Calcium (mg/dl)	9.9±0.6
Phosphate (mg/dl)	3.4±0.7
25(OH)VitD (ng/ml)	29.1±14.9
1,25(OH)2VitD (pg/ml)	35.7±13.5

Selected parameters of the study population

Table 2

model	OR	95% CI	p
age	13.8	6.5-21.7	<0.001
BW	9.4	3.4-15.9	0.002
Corticosteroid treatment before transplantation	9.0	1.9-43.5	0.006

Logistic regression analysis showed that advanced age, low BW and corticosteroid use before transplantation significantly increased risk for osteoporosis

PP-056 - Renal Transplantation

The Impact of HBV Infection on the Long Term Outcome of Kidney Transplant Patients: One Center Experience

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Introduction: The aim of this study was to reveal long term outcomes of kidney transplant (KTx) patients with HBV infection in our center.

Subjects and Methods: In the study we analyzed retrospectively the follow-up data of 1642 transplant patients from January 1999 to December 2008, of whom was 55 patients with HBsAg seropositivity (3,2%) before KTx. Three patients had also HCV co-infection. These patients were evaluated in terms of graft function, liver function, graft-patient survival rates and risk factors affecting these parameters.

Results: Fifty five HBsAg (+) KTx patients (mean age; 37,1±9,9 years, 81,8 % male) were assessed retrospectively. 55 patients had HBsAg seropositivity (3,2%). Mean follow up time was 43±21,1 months. During this period, neither patient death nor hepatic cirrhosis/tumor occurred. Only one patient suffered from severe graft dysfunction due to chronic allograft nephropathy. 98,2 % of patients had functional graft at the end of the follow up period with average GFR of (MDRD); 70,8±19,2 ml/min. Only 5,5 % of patients had proteinuria greater than 500mg/day. Kaplan-Meier estimated graft survival rates were 97,8% at 2 years and 86,5% at 7 years. HBV-DNA was positive for 60% of patients; there was significant correlation between viremia and the degree of ALT elevation (p<0,01). Use of ATG (21,2%) and immunosuppressive protocol did not affect significantly the degree of HBV viremia and ALT level.

Conclusion: We found that long term patient and graft survival of KTX patients with HBV infection was impressive. These results suggested that KTX is a safe and effective renal replacement therapy in patients with HBV infection.

PP-057 - Renal Transplantation

Four-Year Follow-Up of Renal Transplantation from Hepatitis B Surface Antigen- Positive Cadaveric Donors

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The waiting list for renal transplantation gradually increases due to shortage of cadaveric donations. Currently, this problem tends to be solved by transplantation from extended donor criteria. Here we analyzed four-year follow-up results of HBsAg (-) renal transplant recipients from HBsAg (+) cadaveric donors. Two hundred eighty patients underwent transplantation in our center between 1992 and 2009. Five HBsAg (-) patients received kidney from HBsAg (+) cadaveric donors. The mean posttransplant follow-up duration was 41.2 ± 10 months (24-50). The liver function tests (AST, ALT) were normal in all donors. All the recipients were HBsAg (-) and anti-HBs titers varied between 198 and >1000 mIU/ml. The recipients received prophylactic hepatitis B immunoglobulin (HBI) before operation, and lamivudine 100 mg/day postoperatively. The immunosuppressive protocol included conventional steroid /cyclosporine / mycophenolic acid. During follow-ups all patients had normal transaminase levels, and remained anti-HBsAb (+), and HBsAg (-). No patients developed clinical HBV infection. One patient had acute rejection episode. The patient and graft survival was 100% with mean serum creatinin levels of 1,4±0,3 mg/dL.

As a result; Under prophylaxis of HBI and lamivudine, kidneys from HBsAg (+) donors can be safely transplanted to recipients positive for anti-HBsAb.

PP-058 - Renal Transplantation

Tuberculosis in Renal Transplant Recipients

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Tuberculosis (TB) is more prevalent in renal transplant recipients compared to normal population and results in high morbidity and mortality. The prevalence of TB in renal transplant patients followed in our center between 1992 and 2009 was 3.2 percent. Five patients received kidney from living-related and four from cadaveric donors. Cadaveric-donor patients received anti thymocyte globulin (ATG) for induction, and four received pulse steroid for acute rejection. The median duration of time between transplantation and TB was 21 (1-150) months. The immunosuppressive protocols included prednisolone and cyclosporine/ rapamycin with or without mycophenolate mofetil/ azathiopurine. The major symptoms were fever, cough and abdominal pain. Extrapulmonary TB developed in 5 patients. The diagnosis was made by; (1) demonstration of acid-fast bacilli or cultivation at specimens (7/9); (2) histological evidence of caseating granuloma (3/9);(3) response to anti-TB treatment in patients with clinical and radiological findings of highly suggestive TB (1/9). All patients received quartet of anti-TB therapy for a median duration of 9 months. One patient died at second month of therapy because of dissemination of TB, and one patient returned to hemodialysis because of chronic allograft nephropathy. Quartet of anti-TB treatment including rifampicin resulted in success in majority of patients.

PP-059 - Renal Transplantation

Full Dose Cyclosporine versus Low Dose Tacrolimus as Maintenance Immunosuppression in Renal Transplant Recipients with Posttransplant Diabetes Mellitus

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Aim: Tacrolimus has been considered as a risk factor for (post transplant diabetes mellitus) development in renal transplant (RTX) patients most of the cases. In patients on tacrolimus based immunosuppressive protocol who developed PTDM, TAC based protocol was either converted to (Cyclosporine A) or tacrolimus was continued at a low dose. In this study, we aimed to compare the effects of low dose tacrolimus based regimes and regular dose CsA based regime on glycemic control as well as rejection, graft function in RTX patients who developed PTDM.

Patients and Methods: 66 RTX patients who developed diabetes mellitus according to the ADA criteria were included in this study. Patients were divided in two groups according to maintenance regimes after development of PTDM: Group I: low dose tacrolimus (n=36) and Group II: regular dose CsA (n=30). Demographic features of the patients are shown in table 1.

Results: Blood glucose levels were similar in first six months but lower in CsA group at the end of the first year (119 (66-514) mg/dl- 105,5 (70-170) mg/dl; p:0,022). Acute rejection rate and graft survival were similar (19,4%- 20%; p:0,955 and 100%). Cr Clearance was higher in tacrolimus group for the first six months (82,5±19,9/ 69,6±21,9; p:0,015).

Conclusion: Instead of converting from tacrolimus to CsA, lowering the dose of tacrolimus results better outcome in patients who developed PTDM in terms of kidney function.

Demographic Data of Patients

Groups	Sex (M/F)	Age	BMI	Diabetes History
CsA	21/9	40.7± 10,7	23.6± 3,4	%16.7
Low Dose Tac	25/11	46± 9,7	27.3± 3,3	%5.6

PP-060 - Renal Transplantation

Conversion to Sirolimus in Renal Transplant Recipients: A Single-Center Experience

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Background: Calcineurin inhibitors (CNI) is associated with nephrotoxicity and accelerated graft loss in renal transplant patients. Sirolimus (SRL) is a potent immunosuppressive agent. We retrospectively analyzed our experience with kidney transplant recipients who were converted from CNI to SRL.
Methods: A total of 58 renal transplant recipients were converted from CNI to SRL. SRL was started at a dose of 0.075mg/kg and, CNI dose was reduced by 50% daily for three days. SRL trough levels were targeted between 8-12 ng/ml. When target trough levels were achieved, CNI was withdrawn.
Results: Mean serum creatinine level was 1.63±0.52 mg/dl before conversion. Serum creatinine levels on the 1, 3, 6 months and 1, 2, 3 years after conversion were 1.64±0.58 mg/dl (p=0.67), 1.52±0.53 mg/dl (p=0.414), 1.62±0.62 mg/dl (p=0.734) and 1.48±0.58 mg/dl (p=0.065), 1.58±0.53 mg/dl (p=0.854), 1.88±0.77 mg/dl (p=0.083), respectively. SRL was discontinued in 16 (31%) patients due to severe side effects. The proportions of patients remaining on SRL therapy were 43.1%, 15.5%, 10.3% at 1,2,3 years after conversion respectively.
Conclusions: SRL conversion may be very useful in patients suffering from neoplasia. Frequent side-effects related with this intervention should be considered, and routine conversion from CNI to SRL to reduce nephrotoxicity should be discouraged.

PP-061 - Renal Transplantation

A Study on Infections in Transplant Recipient

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Introduction: Transplant recipient have a higher risk of developing infection. The risk is multifactorial. Infections pose a significant threat to the graft and to the patient as well.

Method: In our study we assessed the infection rate and the type of infections in our recipients and tried to assess the risk factors involved. We performed a retrospective study on 105 renal recipients in a period of 2 year 2006-2008 with a minimum follow up of one year.

Results: Median age was 34.8±11.3 (16-58). The patients received organ from living donors. (UTI) was found in 58% of pts, systemic infections in 7%, gastrointestinal infection-8%, respiratory infections in 5%, wound infections in 4%. Bacteria were responsible in 79% of cases, while virus for 9% and fungus for 12%. 73% of the patients who had an initial UTI got a recurrent one. In UTIs E. coli is the main organism isolated from the culture (41%), followed by Enterococcus(24%). UTI was > in ♀ as compared to ♂ (67. 5% vs 32.5%). Diabetic recipients had got increased incidence of UTI or other infections (15/23-65%). There was no death or immediate graft loss associated with infections.

Discussion: ♂ and DM are independent risk factors for UTI. Recurrent infections are a serious problem in a renal Tx patient.

Conclusion: UTI is the most common infections in our center.

PP-062 - Renal Transplantation

Cryptosporidiosis: A Rare and Severe Infection in a Pediatric Renal Transplant Recipient

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Cryptosporidium is an intracellular protozoan parasite that causes gastroenteritis in human. In immunocompromised individuals, cryptosporidium causes far more serious disease. There is no effective specific therapy for cryptosporidiosis and spontaneous recovery is the rule in healthy individuals. However immunocompromised patients need effective and prolonged therapy. Here, we present our clinical experience in a 6 years-old-boy who underwent living-related donor renal transplant recipient infected with cryptosporidium spp. Our patient was successfully treated with antimicrobial agents consisted of spiramycin, nitazoxanide and paramomycin. At the end of second week of therapy his stool became negative for cryptosporidium spp. antigen and spiramycin was stopped. Nitazoxanide and paramomycin treatment was extended to four weeks. With this case, we want to emphasize that cryptosporidiosis should be considered in the differential diagnosis of severe or persistent diarrhea in solid organ transplant recipients where rigorous antimicrobial therapy is needed.

PP-063 - Renal Transplantation

Recurrence of Wegener's Granulomatosis Ten Years after Renal Transplantation: A Case Report

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Introduction: ANCA associated systemic vasculitides (AASV) are rare diseases frequently leading to end stage renal disease (ESRD). Wegener's Granulomatosis (WG) is a necrotizing AASV that may involve upper and lower respiratory tract as well as kidneys. It may relapse after renal transplantation in spite of immunosuppressive treatment. Here we present a case which relapsed ten years after transplantation.

Case: Fifty four years old male presented with moderate hypertension and bilateral pretibial edema ten years ago; and was found to have elevated creatinin levels, nephritic urine sediment, positive cANCA and normal renal ultrasonographic findings. Renal biopsy performed with these findings was consistent with WG. He had renal transplantation from living related donor after six months period of hemodialysis. He had biopsy of transplanted kidney ten years after transplantation due to elevated urea and creatinin levels and nephritic urine sediment. cANCA was again positive and pathological findings showed relapse of WG and need of hemodialysis within one year.

Discussion: AASV may progress to ESRD as in this case. Renal transplantation is a good treatment option for those patients; and posttransplant survival rates are not different from other patients. Presence of cANCA, nephritic urine sediment and retention of nitrogenous compounds must remind relapse.

PP-064 - Renal Transplantation

Carbapenem-Resistant Klebsiella Pneumoniae Isolated from a Renal Transplant Patient with OXA-48 and VIM-5 Carbapenemases Treated Successfully with Imipenem and Colistin

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Introduction: Carbapenems such as imipenem and meropenem, are considered to be the treatment of choice for managing multidrug resistant infections caused by Enterobacteriaceae. However, resistance to carbapenems has emerged particularly among Klebsiella pneumoniae over the last decade.

Material and Methods: Here we report two different carbapenemases belonging to Ambler classes B (metallo-β-lactamases) and D (oxacillinases) present in a single carbapenem-resistant K. pneumoniae isolated from a renal transplant patient. The patient was a 50-year-old male who was admitted to the ICU with a diagnosis of community-acquired pneumoniae on July 15th, 2009.

Results: He received piperacillin-tazobactam, clarithromycin and trimethoprim/sulfamethoxazole for two weeks. K. pneumoniae resistant to all β-lactams, including carbapenems was isolated from blood cultures. The patient's immunosuppressive drugs were stopped. The patient was treated successfully with imipenem and colistin combination. PCR indicated that the isolate harboured both blaOXA-48 and bla VIM-5 genes. **Conclusion:** To our knowledge, this is the first report of a K. pneumoniae carrying both metallo-β-lactamase (bla VIM-5) and oxacillinase (bla OXA-48) genes. The detection of these bacteria remains difficult with conventional methods and may pose serious therapeutic problems.

PP-065 - Renal Transplantation

The Anemia after Renal Transplantation as a Risk Factor of Chronic Allograft Dysfunction

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Introduction: Anemia is prevalent among kidney transplant recipients and likely contributes to mortality and morbidity. Prevalence of anemia is associated strongly with degree of kidney graft dysfunction. The aim of this study is to find the frequency of anemia after renal transplantation (RTX)

Methods: 105 RTX patients 26 ♀ and 79 ♂ (mean age 34.8±11.3 years), range 16-58 years were studied during a period of 6 years.

Results: Average Hb level in RTX recipients was 13.1g/dl (range 9-15g/dl). Of these patients, 11.6 had moderate anemia: Hb concentration was 11-12g/dl for ♂ patients and 10-11g/dl for ♀ patients, while 8.5% had severe anemia (Hb <11g/dl for ♂ patients and <10g/dl for ♀ patients). There existed an association between Hg concentration and renal graft function. Of the patients with serum Cr>2mg/dl (which indicates impaired kidney function) 32% were with anemia, compared with 19% of those with serum Cr <2mg/dl (p<0.001). Furthermore 20% of patients with anemia were treated with epoetin alfa or beta.

Discussion: Post RTX anemia is recognized as a common problem in RTX recipients and sometimes need to be treated with EPO. The risk factors of anemia include therapy with ACE inh. or ARB, azathioprin or MMF, previous glomerular and kidney disease, and recent infections.

Conclusion: Post RTX anemia is frequent in our patients, at whom exist a strong association between Hb concentration and renal graft function. Erythropoietin is an efficacy treatment in these patients.

PP-066 - Clinical Nephrology

Reduction of Proteinuria after Eradication of Helicobacter Pylori Infection in Patients with Membranous Nephropathy

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Background: Recently Helicobacter pylori (HP) infection has been suggested to be associated with membranous nephropathy (MN) and IgA nephropathy (IgAN). In this study prevalence of HP infection and the effects of HP eradication on proteinuria levels in patients with MN were investigated.

Methods: Thirty-seven patients with MN, 15 patients with IgAN and 11 patients with focal segmental glomerulosclerosis (FSGS) were studied. The presence of HP antigen was investigated in renal tissues and the effects of HP eradication on proteinuria levels were also investigated.

Results: Immunohistochemistry with HP antigen revealed no positive staining in renal biopsy specimens in all patients. 18 patients (49%) with MN, 12 (80%) with IgAN and 4 (36%) with FSGS were positive for HP stool antigen test (p=0.05). Patients with HP infection were administered eradication therapy. Before the therapy the mean urinary protein excretion of patients with MN, IgAN and FSGS were 1.97±3.43 g/day, 2.22±1.89 g/day and 1.55±1.53 g/day, respectively. After 3 months, baseline proteinuria levels of patients with MN significantly decreased to 1.01±1.59 g/day (p=0.008). Decreases were also noted in patients with IgA nephropathy (1.45±1.76 g/day; p=0.18) and FSGS (1.91±1.21 g/day; p=0.72).

Conclusion: The eradication of HP infection successfully reduced proteinuria in patients with MN.

PP-067 - Clinical Nephrology

A Rare Cause of IgM Nephropathy: Adult Still's Disease

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Introduction: The type of mesengial proliferative glomerulonephritis having IgM deposition in DIF is called IgM nephropathy. A case performed renal biopsy due to urine findings and diagnosed as IgM nephropathy is presented.

Case: The patient was hospitalized for 3 weeks fever of 39 °C and weight loss. Viral and bacterial causes were not positive, and ANA, anti-ANA, ANCA were negative. Owing to persistent hematuria and 1050mg/day proteinuria, biopsy was done. In the period of hospitalization, arthritis was observed, examination of arthrocentesis revealed inflammatory arthritis. Complement levels were normal. Biopsy revealed increased mesengial matrix, cellular proliferation, and mesengial IgM deposition in DIF (Figure-1, 2). Because of systemic sings (WBC:11, 400, Hb:8. 9 g/dl, Hct%27, ESR:120mm/h, CRP:96mg/L, AST:43U/L, ALT:31U/L, GGT:200 U/L, ALP:314 U/L), investigations (liver biopsy, lymph node biopsy, bone marrow biopsy) to exclude systemic causes was carried out. So, systemic causes such as lymphoma, tuberculosis and sarcoidosis were excluded, and diagnosis of adult Still's disease was made (ferritin:2122ng/ml). With the treatment of indomethacin and 1 mg/kg prednisolone, fever and disordered urine findings returned to normal.

Conclusion: Adult Still's disease is a systemic disease with unknown etiology and pathogenesis. Since it doesn't have spesific clinical and laboratory findings, its diagnosis was made by excluding other diseases. It is characterized by high levels of ferritin. Although persistant proteinuria other than intermittan proteinuria accompanying fever episodes was rarely reported, mostly they are related to amiloidosis. With our case, another rare cause of Still's disease is emphasized.

PP-067

Figure-1: Hematoksilen-Eosin (x100)

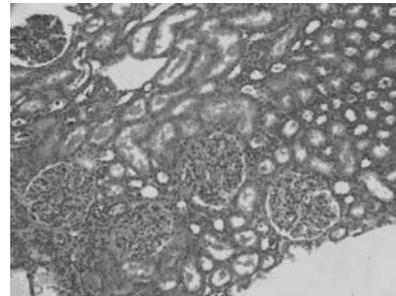
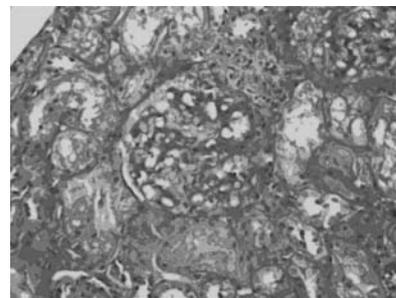


Figure-2: Periyodik asit schiff (PAS) (x200)



PP-068 - Clinical Nephrology

High Frequency of Aspirin Resistance in Patients with Nephrotic Syndrome

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Objective: Aspirin (ASA) has a beneficial role in prevention of cardiovascular and thromboembolic events. Patients may experience thromboembolic events despite ASA treatment, a phenomenon called ASA resistance. We evaluated the frequency of aspirin resistance and its correlation with clinical and biochemical parameters among patients with nephrotic syndrome (NS).

Method: 36 patients (22 male, 14 female) with NS using ASA 100 mg/d were analyzed. ASA resistance was defined as a normal collagen/epinephrine closure time <159 seconds using a platelet function analyzer (PFA-100). Data for each patient including age, sex, body mass index, glomerular filtration rate (GFR) calculated by 4 variable MDRD equation, platelet count, lipid profile, serum creatinine (SCr) and albumin, CRP, 24-h urine protein and albumin levels were recorded.

Findings: ASA resistance was determined in 22 patients (61.1%). Demographic variables, GFR, platelet count, SCr, albumin, CRP, proteinuria, albuminuria were similar between the ASA-sensitive and ASA-resistant groups (p>.05). ASA-resistant group showed significantly higher total cholesterol (232.6±50.5 vs 177.2±39.9; p<.001) and low-density lipoprotein cholesterol (147.3±47.4 vs 110.9±30.1; p=.008) compared with ASA-sensitive group.

Conclusion: We demonstrated a high rate of ASA resistance in patients with NS. High levels of total cholesterol and low-density lipoprotein cholesterol may be associated with ASA resistance in NS.

PP-069 - Clinical Nephrology

Cytokines Detected in the Urine of Patients with Pauci Immune Rapidly Progressive Glomerulonephritis (RPGN), Using a Multiplex Bead-Based Immunoassay

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Quantification of urinary cytokines during the course of RPGN by a multiple immunoassay may give valuable information for disease pathogenesis and progress.

First morning urine samples were obtained from 38 patients with pauci immune RPGN at day of renal biopsy, [17 female, age 59.5yrs (25-80)], and 10 healthy controls, and used to detect EGF, TGF- β 1 and VEGF by hs-Elisa, and IL-1beta, IL-15, MCP-1, MIP1a, MIP1b by bio-plex cytokine method. All cytokines were increased in RPGN patients compared to controls. The urinary levels of TGF- β 1 had a significant positive correlation with the percentage of crescents, $r=0.5$, $p=0.02$, degree of interstitial fibrosis, $r=0.8$, $p=0.01$, and the urinary levels of IL-1beta $r=0.9$, $p=0.0001$ and IL-15 $r=0.6$, $p=0.0001$. Patients' eGFR after the first three months of treatment had negative correlation with urinary VEGF ($r=-0.6$, $p=0.009$), IL-15 ($r=-0.6$, $p=0.02$), and MIP-1 α ($r=-0.6$, $p=0.04$) and at the end of follow up with IL-15 ($r=-0.6$, $p=0.02$), MIP-1 α ($r=-0.6$, $p=0.02$) and MIP-1 β ($r=-0.7$, $p=0.0004$).

TGF- β 1 seems to play a key role in the pathogenesis of renal damage in RPGN. VEGF urinary levels may predict the patients' first response to immunosuppression whether IL-15, MIP-1 α and MIP-1 β are cytokines mainly associated with the long term outcome of disease.

PP-070 - Clinical Nephrology

Adult Native Renal Biopsy Experience of Ege University For 12 Consecutive Years

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Background: To establish epidemiological data about the frequency and prevalence of biopsy proven nephropathies is important.

Methods: We evaluated adult native renal biopsies at Ege University from January 1996 to May 2009. Renal diseases classified into four major categories: primary glomerulonephritis (GN), secondary GN, tubulointerstitial nephropathies and chronic GN.

Results: Among the totally 1702 renal biopsies (males 52%, ages 16-82, mean 40 \pm 15 years) the most frequent renal diseases were primary (52.4%) and secondary (31%) glomerulonephritis (GN). Chronic GN was accounted 5.23%, and tubulointerstitial nephritis was 4.4%.

Secondary GN rate was significantly higher than the other Balkanian countries due to our relatively high amyloidosis rate caused by Familial Mediterranean Fever (Table).

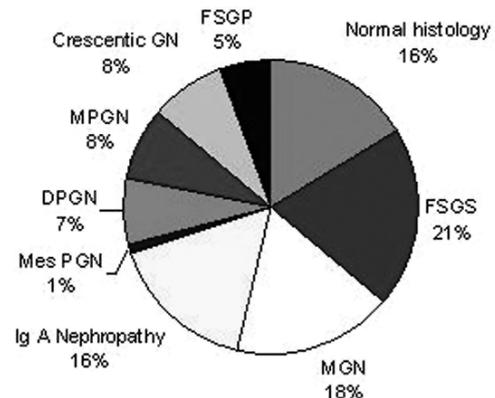
Focal segmental glomerulosclerosis 10.3%; membranous GN 9.2%; IgA nephropathy 8.5%; crescentic GN 4.3%; membranoproliferative GN 4.3%; diffuse proliferative GN 3.8%; focal segmental proliferative GN 2.9% and mesangioproliferative GN 0.5% were formed primary glomerulonephritis. Amyloidosis 12.2%; systemic lupus erythematosus 11%; vasculitis 3.2%; diabetic nephropathy 1.7%; hypertensive nephrosclerosis 1.4%; thrombotic microangiopathy-hemolytic uremic syndrome 0.7% and antiglomerular basement membrane disease 0.3% were represented secondary glomerulonephritis.

PP-070

Primary GN is predominant across age groups. Above 65 years, membranous (14.8 %) and crescentic (9.9 %) GNs are predominant while less than 65 years IgA nephropathy (9 %) is predominant. Amyloidosis (19 %) and lupus nephritis (11.7 %) are also predominant secondary glomerulonephritis in age groups respectively.

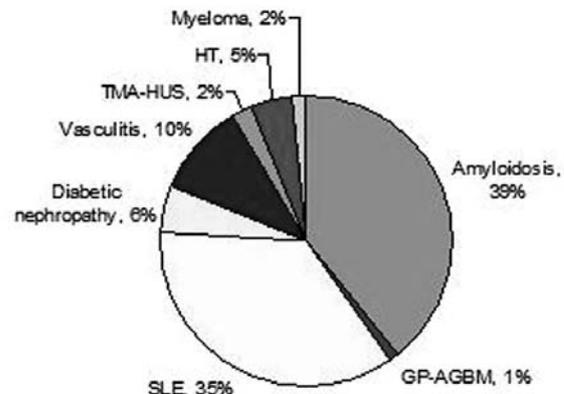
Conclusion: The present data represents a single centre experience. The availability of such this registry will allow epidemiologic studies to answer the several open questions in both prevention and treatment of nephropathies.

Figure-1: Primary Glomerulonephritis



GN: Glomerulonephritis, FSGP: Focal segmental proliferative glomerulosclerosis, MPGN: Membranoproliferative glomerulonephritis, DPGN: Diffuse proliferative glomerulonephritis, Mes P GN: Mesangio proliferative glomerulonephritis, MGN: Membranous glomerulonephritis, FSGS: Focal segmental glomerulosclerosis

Figure-2: Secondary Glomerulonephritis



HT: Hypertension, TMA-HUS: Thrombotic microangiopathy-Hemolytic uremic syndrome, SLE: systemic lupus erythematosus, GP-AGM: Good pasture-Anti glomerular basement membrane disease

Distribution of major histological groups of renal disease

	Romania, Moldova and Banat regions 2005 N=606 (%)	IRRB, Gesualdo et al. N=14607 (%)	CRRB, Rychlik et al. N=4004 (%)	Serbia, Naumovic et al., N=1488 (%)	Turkey, Ege, N=1702 (%)
Primary GN	66.2	70.8	59.8	64.2	52.4
Secondary GN	26.4	23.7	25.4	25.1	31
TIN	1.5	2.3	4.4	3	4.4
Vascular nephropathies	2.3	3.2	3.4	4.2	4
Miscellaneous/unclassifiable	3.6	N/A	2.4	3.5	8.2

IRRB, Italian Registry of Renal Biopsy; CRRB, Czech Registry of Renal Biopsy; GN, glomerulonephritis; TIN, tubulointerstitial nephropathy.

PP-071 - Clinical Nephrology

Significance of Anti-C1q Autoantibodies in Lupus Nephritis

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Methods: Sera from 54 patients (49 f, 5 m) with lupus nephritis were collected from peripheral blood at the time of renal biopsy and after mean 64,2 months (from 56 to 77). The disease activity was assessed by SLEDAI. Renal histopathology was classified according to the revised criteria for glomerulonephritis in SLE by the ISN/RPS.

Results: 43 patients were reported as having positive baseline serum anti-C1q Ab. The prevalence of anti-C1q Ab in patients with diffuse proliferative renal lesions (class IV) was significantly higher than in patients with non-diffuse proliferative renal lesions (class II +III) and those with membranous lesions (class V). There was a positive correlation between the presence of anti-C1q Ab and SLEDAI ($r=0,71$; $P<0,001$), activity indices ($r=0,53$, $P<0,001$), proteinuria ($r=0,49$, $P<0,01$), glomerular leucocyte infiltration ($r=0,38$, $P<0,001$), kariorrhexis and fibrinoid necrosis ($r=0,59$, $P<0,001$), endocapillary hypercellularity ($r=0,41$, $P<0,001$). The correlation with SLICC ($r=0,46$) showed only a bordering significance ($p=0,052$). Levels of the C1q antibodies correlate inversely with levels of other complement system (C3 and C4).

Conclusions: Anti-C1q Ab closely associated with diffuse proliferative lesions. The anti-C1qAb could be used as a marker for disease course monitoring and for determine the treatment strategy and the prognosis.

PP-072 - Clinical Nephrology

The Evaluation of Factors Effective on Progression of Rapidly Progressive Glomerulonephritis

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Background: Rapidly progressive glomerulonephritis (RPGN) is a heterogenous disorder that usually progresses to end stage renal disease (ESRD) in untreated cases. The underlying etiology is multifactorial and definite prognostic factors remains to be determined.

Methods: A total of 53 patients, who underwent renal biopsy and diagnosed to have RPGN, were retrospectively evaluated with regard to demographic features, clinical course and prognostic factors.

Results: Mean age was 42 ± 17 (16-77) years, and 29 (55%) of patients were females. Eight (15%) of the patients suffered from anti-GBM disease, 31 (59%) had immun complex mediated and 14 (26%) had pauci-immun RPGN. Twenty two (75.8%) of 29 patients whose creatinine levels were 3.65 mg/dL or more, reached ESRD. In addition, percentage of crescentic glomeruli ($88\% \pm 20$ vs. $67\% \pm 20$; $p<0.0001$) and patients with disseminated tubular atrophy (21% vs. 8%; $p=0.012$) were significantly higher in the patients who did not respond the treatment and reached ESRD.

Conclusion: Extent of renal dysfunction at admission to hospital, percentage of crescentic glomeruli and tubular atrophy were found to be the important prognostic factors in the development of ESRD.

PP-073 - Clinical Nephrology

Diffuse Crescentic Glomerulonephritis in Association with Crohn's Disease

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Introduction: Crohn's disease (CD) is a chronic recurrent inflammatory bowel disorder. Extraintestinal manifestations are common in the course of the disease. Glomerulonephritis (GN) has rarely been reported in association with CD. We describe a patient with CD who developed p-ANCA positive crescentic GN.

Case Report: A 63-year-old woman presented with nausea and oliguria. She had CD diagnosed by colonoscopic biopsy one month ago. On admission, serum creatinine (SCr) was 4.8 mg/dl, urea 107 mg/dl, albumin 1.6 g/dl. Liver function tests were normal. Urinalysis revealed 10-12 RBCs. Proteinuria in 24-h urine was 3.4 g/day. ANA titer, anti-ds DNA antibodies were negative, p-ANCA was positive. Her SCr was 1.3 mg/dl when she was diagnosed as CD. High-resolution computed tomography showed bilateral pleural effusion. Because anuria and hypervolemia developed, she was started on hemodialysis. Histologic examination of renal biopsy showed 14 glomeruli. Eight had global glomerular sclerosis and five showed cellular crescent formation. She received steroid pulses followed by oral prednisone and pulsed cyclophosphamide. However, renal functions did not improved, and she underwent maintenance hemodialysis.

Result: Crescentic GN may develop as an extraintestinal manifestation in the course of CD. Thus, close monitoring of renal functions should be considered in such cases.

PP-074 - Clinical Nephrology

Effect of Tenofovir in the Case of Lamivudine Resistant Hepatitis B Related Focal Segmental Glomerulosclerosis

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Introduction: The spectrum of renal disease in patients with hepatitis B virus (HBV) is expanding. The relation between HBV and membranous glomerulonephritis, membranoproliferative glomerulonephritis and IgA nephropathy were well documented previously. However, HBV related focal segmental glomerulosclerosis (FSGS) was rarely reported. Only three HBV related FSGS patients were treated with lamivudine. Improvement was observed in all reported patients. We herein present a first case report of tenofovir responded hepatitis B related FSGS.

Case report: 26 year-old man was admitted to our clinic with severe edema before. He was history of HBV infection before 10 years. Physical examinations revealed 4+ pretibial edema. In his laboratory examination; BUN: 26 mg/dl, serum Cr: 0,8 mg/dl, AST: 20 IU/l, ALT: 46 IU/l, HBV DNA: 10×10^2 copies/ml, serum albumin: 2,5 g/dl and total protein excretion was 14,2 g/day in 24 hour urine samples. Percutaneous kidney biopsy performed. First biopsy was according with minimal change disease. Prednisolone was started with lamivudine treatment because of nephrotic syndrome. Proteinuria decreased below two g/day. After 18 months proteinuria increased to 5,7 g/day and HBV DNA elevated to 10×10^4 copies/ml. Because of recurrence of nephrotic syndrome under steroid treatment, re-biopsy performed. Biopsy was according with FSGS. Tenofovir started because of increasing HBV DNA titers under lamivudine treatment. After 3 months serum HBV DNA turned undetectable and proteinuria decreased to 1,3 g/day.

Conclusion: Decreasing of HBV DNA titers is related with improvement of proteinuria in FSGS patients. Tenofovir may an effective treatment choice in lamivudine resistant HBV related FSGS patients.

PP-075 - Clinical Nephrology**Medullary Sponge Kidney (MSK) in Association with Renal AA Amyloidosis in a Patient with Reduced Renal Function**

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Introduction: MSK is a rare, congenital anomaly characterized by cystic dilatation of medullary collecting ducts. Glomerulopathy in MSK has rarely been reported. We describe a patient with MSK who developed renal AA amyloidosis.
Case Report: A 43 year-old woman was referred for haematuria and nephrotic range proteinuria. She had MSK which was diagnosed by intravenous pyelography 16 years ago. Physical examination was remarkable for bilateral mild pretibial edema. Serum creatinine was 2.7 mg/dl, urea 55 mg/dl, ESR 36 mm/h, albumin 1.7 g/dl. Spot urine protein/creatinine was 13.2. Urinalysis revealed 8-10 RBCs. ANA titer, anti-ds DNA antibodies were negative. Plain graphy identified multiple calcifications corresponding to the renal pyramids. Renal ultrasound showed multiple bilateral renal calculi without hydronephrosis. Intravenous pyelograms showed a brush-like appearance radiating out from the calices. Unenhanced CT demonstrated multiple calcifications with stones in both kidneys. Renal biopsy showed AA amyloidosis. Since the patient did not have any chronic inflammatory diseases which may potentially lead to secondary amyloidosis, a diagnosis of medullary sponge kidney with renal AA amyloidosis was made.

Result: Proteinuria and renal failure may complicate the course of MSK. In such a case, other coexisting nephropathies should be considered and diagnostic procedures should promptly be started.

PP-076 - Clinical Nephrology**C3 Depositions in Proximal Epithelial Tubular Cells are Often in Minimal Change Disease and IgM Nephropathy**

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The aim of the study was to establish the incidence of C3 depositions in proximal tubular epithelial cells (C3 PTEC) and to evaluate the role of proteinuria (Pu) for that changes. We reviewed for deposition of C3 in proximal tubular epithelial cells (PTEC) 94 kidney biopsies provided for 1 year in our clinic. C3 PTEC were established at 16 of them (17,02%). Five (7,08%) from all patients with mild and moderate Pu and 11 patients (36,67%) from those with nephrotic Pu had such findings. From 16 patients with C3 PTEC-8 (50%) were with idiopathic nephrotic syndrome-4 with minimal change disease and 4 with IgM nephropathy, 2 were with IgA nephropathy, 2 with interstitial nephritis, 1 with crescentic, 1 with membranous and 1 with mesangialcapillaris glomerulonephritis. Mean Pu was 5,36±5,3g/d. Serum creatinine was 197±120,21 µmol/l and creatinine clearance was 53,2±25,03ml/min/1.73m². With C3 PTEC were 11 patients (68,75%), with Pu 10,5±3,4g/d and 5 (31,25%) were with 1,26±0,9g/d. There was a correlation between duration of hypertension and C3 PTEC /r= +0,774, p<0,01/. We conclude that C3PTEC are rarely findings in kidney biopsy. Their incidence is higher in nephrotic Pu and patients with minimal change disease and with IgM mesangialproliferative glomerulonephritis.

PP-077 - Clinical Nephrology**Treatment and Outcomes of Idiopathic Focal Segmental Glomerulosclerosis: Immunosuppressive Agents or Renin Angiotensin System Inhibitors**

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Background: Idiopathic focal segmental glomerulosclerosis (FSGS) is a frequent cause of nephrotic syndrome and corticosteroids (CS) remain the mainstay of treatment. We compared the efficiency of 12 months of three different treatment regimens.

Methods: 51 patients with primary FSGS were randomly assigned to receive treatment with renin angiotensin system (RAS) inhibitors (group1, n=13) or CS (1mg/kg/day) (group2, n=22) or CS+Cyclosporine (CsA) (3-5mg/kg/day) (group3, n=16).

Results: Baseline proteinuria levels of group 1 patients (2.65±1.61g/day) were significantly lower than group 3 (5.97±4.56g/day) (p=0.048). Serum albumin levels were significantly higher in group 1 (3.52±0.47g/dL) than group 2 (2.71±0.91 g/day) and group 3 (2.35±0.57g/dL) (p=0.007, p=0.000). At the end of one year, remission occurred in 7 patients (53.8%) (4 complete and 3 partial) in group 1, 15 (68%) (12 complete and 3 partial) in group 2 and 8 (50%) (6 complete and 2 partial) in group 3 (p=0.483). The baseline proteinuria levels of patients in group 2 (5.41±3.91 g/day) and group 3 (5.96±4.83 g/day) significantly decreased to 2.03±3.16 g/day (p=0.004) and 2.03±2.40 g/day (p=0.012), respectively.

Conclusion: Steroid treatment or CsA+low-dose CS show similar efficacy in inducing remission in patients with FSGS. Treatment with CS may be more effective than RAS inhibitors alone in preserving GFR in FSGS patients.

PP-078 - Clinical Nephrology**Familial Mediterranean Fever and IgA Nephropathy: Report of a Case**

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Introduction: Familial Mediterranean Fever (FMF) is an autosomal recessive genetic disease. It is characterized by recurrent attacks of fever and painful episodes of sterile polyserositis. Renal involvement in FMF, which is usually depend on amyloidosis. Moreover, other glomerulopathies have also been reported.

We herein present a rare case of IgA nephropathy in the course of FMF.
Case report: A 27-year-old female was admitted to our hospital because of proteinuria in urinary analysis. The patient had been diagnosed with FMF 15 years previously. She has taken colchicine treatment 1,5 mg/day, but not regularly. The physical examination of patient's was normal. Laboratory examinations revealed 619 mg/day proteinuria in 24 hour urine sample and other biochemical findings and blood cells count were in normal ranges. Serologic tests for hepatitis B/C, ANA, RF, IgG, IgM, IgA, C3 and C4 were normal. Renal biopsy revealed typical IgA nephropathy and moderate focal segmental glomerulosclerosis existed. Proteinuria resolved after colchicine added to the treatment.

Conclusion: Several kinds of glomerular diseases can be seen in FMF and FMF-associated glomerulonephritis may be more common than is reported. Additionally, colchicine therapy may resolve proteinuria if added in early stages of glomerulopathies.

PP-079 - Clinical Nephrology

Anti Cyclic Citrullinated Peptides (Anti-CCP) Positivity Rate in Patients with Familial Mediterranean Fever

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Introduction: Familial Mediterranean fever (FMF) is characterized by recurrent episodes of polyserozitis. Prevalence of synovial involvement was reported between 30-70% in the course of FMF. Moreover, arthritis may relate with other rheumatologic disease such as rheumatoid arthritis. Anti-CCP antibodies are a high-specificity marker in diagnosis of RA, and easily detectable. In this study, we were investigated anti-CCP positivity in FMF patients.

Patients/Methods: 83 patient with FMF and 43 control subjects were compared on the based of similar ages and gender. FMF patient defined in two groups. GroupI: patient who had history of arthritis on the course of FMF and groupII: no history of arthritis. Anti-CCP and RF were measured in all groups. Anti-CCP titers higher than 20 IU/l defined as positive.

Results: 37/83(44%) patients had history of arthritis. Anti-CCP was positive in 10/37 of groupI, 2/46 of group II and 2/43 of control group. Anti-CCP positivity was significantly higher in arthritic group than nonarthritic and control groups (p<0,05), (Table I). Additionally, anti-CCP positivity was higher in heterozygote mutant than homozygote mutant group (p<0,05).

Conclusion: Anti-CCP positivity may occur in the future of arthritic FMF. Additionally, early rheumatoid arthritis should suspected from anti-CCP positive arthritic patients with FMF.

PP-080 - Acute Renal Failure

Lornoxicam-Induced Acute Interstitial Nephritis

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A 49-year-old female was admitted to the emergency unit with a twelve-hour history of nausea, vomiting, abdominal pain. She was using 8mg intramuscular lornoxicam for seven days prescribed by her orthopedist for chronic buttock pain due to L4/5 facet joint degeneration. She denied using any other prescribed or over-the-counter medications. Examination was unremarkable. Urine output was 50cc/day. Her blood pressure was 150/90 mm/hg. Her laboratory values on first day; Hgb 10. 8g/dl, Hct 31. 4 %, urea 131mg/dl, creatinine 8. 36mg/dl, uric acid 9mg/dl, P 8. 8mg/dl, sedimentation 68mm/h, Na 144mmol/L, K 3. 6mmol/L, Ca 9. 3mg/dl; autoimmune antibodies were negative (anti-Scl-70, anti-Jo-1, anti-glomerular basal membrane antibody, ASMA, c-ANCA, p-ANCA, anti-histon antibody, anti-Sm antibody, anti-centromere antibody, AMA, ANA, urine analysis shows albumine +2, eritrosit 8/hpf, lokosit 3/hpf. She was commenced on a two-week course of prednisolone 1mg/kg/day, nifedipine 60mg/day, calcium acetate 1000mg/day, allopurinol 300mg/day. A renal ultrasound demonstrated a normal bladder and urinary tract with no obstruction. An ultrasound guided percutaneous renal biopsy was performed, the histology was consistent with a drug-induced acute interstitial nephritis. Second day urine output started. The urine output started to increase with improvement in serum creatinine and BUN levels. Urine output was 7000cc/day on fourteenth day. Hemodialysis was discontinued after her serum creatinine level fell below 4 mg/dl. Her laboratory values on fourteenth day were creatinine 1. 87mg/dl, uric acid 3, 6mg/dl, P 3. 6mg/dl, urea 68mg/dl. She was discharged to come to outpatient clinic for check up 4 weeks later.

PP-081 - Clinical Nephrology

ANCA-Associated Vasculitis: Clinical Course and Outcome in 33 Patients with Renal Involvement

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Introduction: The anti-neutrophil cytoplasmic antibody (ANCA) associated vasculitides are a group of heterogeneous diseases.

The Aim: To analyze the clinical course and outcome in patients with ANCA-associated vasculitis hospitalized in Clinical Center of Serbia.

Patients and Methods: 33 patients with a diagnosis of ANCA-associated vasculitis with renal involvement were studied retrospectively. All patients had been tested for the presence of ANCA by indirect immunofluorescence (IIF) or by enzyme-linked immunosorbent assay (ELISA).

Remission was defined as the stabilization or improvement of renal function and resolution of extrarenal manifestations of disease. Relapse was defined as a rise in creatinine concentration occurring with a nephritic sediment or worsening/new extrarenal manifestation involving the typical organ systems.

Results: The study included 12 women and 21 men. The mean age was 52.1years. The most common finding was musculoskeletal complaints (90.9%). Upper respiratory symptoms (18.2%) and pulmonary disease (33.3%) were the most common organ manifestations. c-ANCA was positive in 63.7% and p-ANCA in 33.3%. Kidney involvement was determined by biopsy in 36.4%. The mean serum creatinine at time of diagnosis was 496 ± 343 µmol/l with a range of 80-1345 µmol/l. Complete remission was achieved in 7 (21.2%) patients, incomplete remission in 10 (30.3%), while 5 (15.1%) were hemodialized. Progressive kidney failure occurred in 7 (21.2%) patients. The remaining 4 (12.1%) patients died suffering from vasculitis.

Conclusion: The present study confirms that in ANCA-associated vasculitis patients with renal involvement the mortality rate is high and chronic renal failure develops in a considerable fraction of the patients.

PP-082 - Clinical Nephrology

Myeloperoxidase (MPO)-Specific Antineutrophil Cytoplasmic Antibody (ANCA) Positivity in a Case of Crescentic IgA Glomerulonephritis

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Introduction: ANCA's are commonly associated with pauci-immune crescentic glomerulonephritis (GN). IgA nephropathy may also be manifest as a crescentic GN, however, it is rarely associated with MPO-ANCA. We describe a patient with severe crescentic GN and diffuse mesangial immun IgA deposits associated with MPO-ANCA.

Case Report: A 48-year-old woman presented with recent onset of haematuria. Laboratory investigations disclosed leukocyte 16,200/mm³, haemoglobin 10.2 g/dl, serum creatinine (SCr) 7.1 mg/dl, urea 181 mg/dl, ESR 112 mm/h, albumin 2.4 g/dl. Urinalysis revealed 10-12 RBCs. Spot urine protein/creatinine was 0.6. ANA titer, anti-dsDNA antibodies were negative. MPO-ANCA level was 37.5 RU/mL (<20). Lung CT was normal. Since oliguria and hypervolemia developed, she was started on haemodialysis. Histologic examination of renal biopsy showed 10 glomeruli. Two had global glomerular sclerosis and six showed cellular crescent formation. Immunofluorescence analysis revealed diffuse mesangial IgA deposits. After steroid pulses followed by oral prednisone and pulsed cyclophosphamide, she showed a rapid response allowing her to discontinue haemodialysis. One month later, her SCr was 2.85 mg/dl, proteinuria 0.5 g/day, urinary sediment unchanged.

Result: This uncommon association may represent an overlap syndrome between ANCA-associated crescentic GN and IgA nephropathy, or a novel subset of crescentic IgA GN with anti-myeloperoxidase antibodies.

PP-083 - Clinical Nephrology**Fabry Disease in a Young Patient with Mild Proteinuria**

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Objective: We present a rare case of Fabry disease manifested only with proteinuria.

Method: A 41-year old male was admitted into the Nephrology Department for investigation of proteinuria. He had a history of hypertension and hypothyroidism. Family history was negative. Clinical examination and laboratory tests-except of proteinuria-were normal.

Findings: Twenty four hour urine protein was 705 mg, while creatinine clearance was normal (98.4 ml/min) and so renal biopsy was performed. Histology showed podocytes with foamy cytoplasm. Based on biopsy findings thesaurismosis was suspected. The levels of alpha galactosidase A in plasma and leukocytes were 0.3 nmol/ml/h (normal 4-21) and 1.5 nmol/mg of protein/h (normal 31-48) respectively. Moreover, DNA testing revealed the mutation pN21 5S in the gene of alpha galactosidase A. The results confirmed diagnosis of Fabry disease. The patient received enzyme replacement therapy with agalsidase B (Fabrazyme) 1mg/kg every 14 days intravenously. After one year of treatment, 24-hour protein levels remain stable with normal renal function.

Conclusion: The classical clinical features of Fabry disease such as angiokeratomas, acroparesthesiae, neuropathic pain, heat or cold intolerance and corneal deposits were absent in our patient. Fabry disease should be considered by nephrologists when a patient presents with proteinuria.

PP-084 - Clinical Nephrology**Diffuse Alveolar Hemorrhage as an Unusual Presentation of Systemic Lupus Erythematosus**

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Diffuse alveolar hemorrhage (DAH) is rarely seen in patients with systemic lupus erythematosus (SLE), often associated with a poor outcome. It almost affects young women and it is an unusual initial manifestation of SLE. We report a case of SLE presenting with DAH. The patient was a male. He had no history of photosensitivity, malar rash, discoid rash, arthritis, oral ulcer. Antinuclear antibody (ANA), and anti-double stranded DNA (dsDNA) were positive with very high titers, and serum complement levels (C3, C4) were low. He had also renal dysfunction and pericardial effusion. He was diagnosed as DAH due to SLE. He had to undergo hemodialysis for several weeks. DAH and renal dysfunction were improved with intensive treatment including corticosteroid, cyclophosphamide, and mycophenolate mophetil. In conclusion, DAH is a rare complication of SLE. It is an uncommon initial manifestation of SLE. Moreover, it seldom affects men. Since any delay in diagnosis and aggressive treatment may directly increase mortality, a possible diagnosis of DAH due to SLE should be taken into consideration in male patients presenting with hemoptysis, dyspnea, cough, and acute decrease in hemoglobin.

PP-085 - Clinical Nephrology**A Case of the Multiple Malignancies Associated Wegener's Granulomatosis**

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There are few reports multiple malignancies in a patient with Wegener's granulomatosis.

46 years old man was admitted in 1998 with joint pain, epistaxis and acute renal failure. After the renal biopsy WG was diagnosed. He treated with glucocorticosteroids, cyclophosphamide and azathioprine. During his follow up, mild relaps occurred for two times and cyclophosphamide restarted in each relapses. On the maintenance therapy azathioprine was used. The total cumulative dose of azathioprine and cyclophosphamide 64,5 and 120 gr, respectively. While he was followed on complete remission, on 2006, he developed renal cell carcinoma and partial nephrectomy was performed. On 2008, he developed low differentiated squamous cell carcinoma from oral buccal mucosa and adjuvant radiation therapy was administered. Now, he is followed up with complete remission for WG, Renal cell carcinoma and squamous cell carcinoma. In this case, after 8 years of the therapy he developed renal cell carcinoma and after 10 years squamous cell carcinoma. To our knowledge, our case is the second report of the two malignancies associated with immunosuppressive therapy in WG. Whether the long term immunosuppressive therapy is a risk factor for the development of malignancies, the pathophysiology of WG should be better understood, and effective and less toxic alternative protocol should be established.

PP-086 - Clinical Nephrology**Proteinuria is not a Strong Independent Risk Factor for Progression of Glomerulonephritis**

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The aim of the study was to establish the influence of proteinuria (Pu) on glomerular filtration rate (GFR). We reviewed 72 kidney biopsies and compared them with clinical and laboratory data. We established that the combination of Pu with mesangial proliferation (MsP) and hyperuricemia (UA) decreased GFR, but the strongest risk factors was hyperuricemia, followed by MsP and Pu. The combination of interstitial infiltrations, Pu and hyperuricemia reduced creatinine clearance and more powerful predictors for progression of glomerulonephritis were UA and interstitial infiltrates than Pu. Interstitial infiltrates decreased GFR with 17 ml/min/1.73m², Pu reduced creatinine clearance with 0,61 ml/min/1.73m² and UA with 0,09 ml/min/1.73m². Interstitial fibrosis that was associated with Pu also reduced GFR with 22 ml/min/1.73m², while Pu decreased GFR with 0,33 ml/min/1.73m². Systolic and diastolic blood pressure were more important for GFR than Pu. We suppose that Pu is not an independent risk factor for renal function, but its importance increases when it is associated with other risk factors as age, hypertension, hyperuricemia, MsP, interstitial infiltrates and interstitial fibrosis.

PP-087 - Hemodialysis, Apheresis, Artificial Organs

The Effect of Darbepoetin Alpha Treatment on Atherosclerotic Markers for Patients with End- Stage Renal Disease

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Aim: The aim of the study was to determine whether darbepoetin alpha treatment, affects the levels of serum homocysteine and high sensitive C-reactive protein (hs-CRP) which are the markers of atherosclerotic diseases at short term.

Patients and Methods: Between May-October 2005, 11 male and 9 female patients receiving dialysis attached to Uludağ University Medical Faculty, Department of Nephrology were enrolled to the study. For these patients at average 0.45 microgram / kilogram dosage darbepoetin alpha treatment were administered. Before the treatment and at twelfth week of the treatment hemogram, serum homocysteine, and hs-CRP levels were measured.

Results: At the end of the treatment increase of hemoglobin and haematocrit levels were statistically significant (p< 0.001) (Table 1). In terms of homocysteine and hs-CRP levels there were not any significant differences between before and after the treatment among the groups.

Conclusion: As a conclusion, it has been determined that darbepoetin alpha treatment improves anemia effectively at patients having end-stage renal disease but it doesn't affect the levels of serum homocysteine and hs-CRP which are the markers of atherosclerosis.

Table 1

	Before Treatment	Twelfth week of the treatment	p
Haemoglobin - gr/dl	8.68 ± 0.2	11.9 ± 0.3	< 0.001
Haematocrit %	25.2 ± 0.7	35.6 ± 1.0	< 0.001
Total cholesterol- mg/dl	185 ± 11.4	197 ± 14.4	>0.05
Triglyceride - mg/dl	162 ± 16	179 ± 21	>0.05
Low-density lipoprotein - mg/dl	111 ± 8.9	112 ± 11	>0.05
High-density lipoprotein- mg/dl	40 ± 2.4	48 ± 3.9	< 0.05
Apolipoprotein-A - mg/dl	132 ± 6.2	102 ± 9.1	>0.05
Apolipoprotein-B - mg/dl	93 ± 4.9	102 ± 9.1	>0.05
Lipoprotein(a) - mg/dl	32.5 ± 6.4	30.5 ± 6.8	>0.05
Total homocysteine- umol/L	22.7 ± 1.9	22.4 ± 2.4	>0.05
High-sensitive CRP -mg/dl	0.96 ± 0.32	0.82 ± 0.2	>0.05

Changes at haematological, biochemical and microbiological parameters

PP-088 - Hemodialysis, Apheresis, Artificial Organs

Insomnia and Its Impact in Daytime Activity in Maintenance Hemodialysis and Peritoneal Dialysis Patients

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The aim of this study was to investigate the prevalence of insomnia in peritoneal and in haemodialysis patients and its impact on daytime activity and well-being. A sleep questionnaire was administered to 88 hemodialysis patients 32 F/56 M, mean age 42.9± 11.6 years and in 32 peritoneal 18F/14M, mean age 49.28±18.52 years. Median time on HD was 51 months and on PD was 18 months. 71.5% on HD and 58.5% of the PD patients reported at least one positive response of questions,with no significant difference for diagnosis of insomnia between 2 grups. From those 46.5% on HD and 28.4%on PD gave more than one positive response. The most prevalent insomnia symptom (63.9%) was the difficulty to go back to sleep. Sleep disturbances were associated with restless legs syndrome in 25%of HD and in 9.6%of PD pts. Only GFR was an independent predictor for RLS (p=0.03). 41.6% felt insomnia impacted on their daily activities, 44.9% on their mood. The use of benzodiazepines was 12.7%.

Using logistic regression analysis, only age is found as an independent factor on insomnia.

This survey confirmed that insomnia is very frequent, with a considerable impact on daytime activity and well-being but it is frequently under treated.

PP-089 - Hemodialysis, Apheresis, Artificial Organs

Abdominal Obesity and Lipids in Hemodialysis Patients

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Introduction: The aim of our study was to determine possible association between dyslipidemia and abdominal obesity-waist circumference (WAC) in hemodialysis (HD) patients

Methods: Were enrolled 85 HD patients (35 ♀ -50 ♂). According to the Internacional Diabetes Federation abdominal obesitywas defined as WAC 80 cm for ♀ and 94cm for ♂. Serum total cholesterol, HDL, LDL, Tg, lipoprotein(a) (LPa), apolipoprotein A (apoA), apolipoprotein B (apoB) were measured by routine laboratory methods.

Results: Mean values for ♀ 92.2±15. 9 cm, for ♂ was 95. 5±15. 9cm. Abdominal obesity was found in 61. 5% of HD patients (73% of ♀;52. 5% of ♂). In man with abdominal obesity only Tg were higher compared to abdominal non-obese patients. In women no differences in lipids between abdominal obese and non-obese were found. All the patients were also devided according WAC into tertiles. Lowest HDL values were found in the third tertile in ♀ and ♂ patients (third vs. first tertile p<0. 011 and p<0. 04). In ♀ also lower total cholesterol and apoA values were found in third tertile (p<0. 033;p<0. 026)In ♂ highest Tg were found in third tertile (p<0. 04).

Conclusion: The results indicate association between abdominal obesity and low HDL in HD patients. Hipertriglyceridemia was also found in male obese patients. In female obese patients lower total cholesterol and apoA values were found.

PP-090 - Hemodialysis, Apheresis, Artificial Organs**Mortality Predictors in Haemodialysis Patients: Single Center Experience**

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Despite improved dialysis techniques and treatment, mortality in haemodialysis patients has remained high in comparison with general population. Main purposes of this cross-section study were examination of patients survival and predictors of mortality. In 2001 a total of 119 patients (55 male, aged from 35 to 82, average 60.09 yrs) who underwent long-term haemodialysis for 1-23 (mean 6.39) yrs, were followed up for the next 60 months. Their baseline clinical data, co-morbidities, dialysis indices and biochemistries were analyzed.

Results: During follow up period 37 patients died due to cardiovascular diseases (64.8%), infections (18.9%), and malignancy (13.5%). The most common co-morbidities were polyneuropathy (77.3%), hypertension (75%), virus hepatitis (68.9%), bone diseases (66.4%) and ischemic heart disease (48.7%). Out of 119 patients, 55% required hospitalisation because of: vascular access problems, cardiovascular diseases and other surgical interventions. Main predictors of mortality were patients age, vascular nephropathy (underlying kidney disease) and days and frequency of hospitalization before 2001.

Conclusion: patients age, vascular nephropathy and hospitalization rate before analysis were selected as the predictors of mortality. Improvement of strategies for prevention of main co-morbidities remains of crucial importance for improvement of haemodialysis patients survival.

PP-091 - Hemodialysis, Apheresis, Artificial Organs**Prevalence of Vascular Access Aneurysm in Patients on Regular Hemodialysis**

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Background-Aim: The prevalence of vascular access aneurysm (VAA) differs between clinical reports. The aim of this study is to evaluate the prevalence of VAA and pseudoaneurysm (VAPA), their characteristics and need for surgical reconstruction.

Methods: VAA and VAPA were examined in 211 hemodialysis patients. Aneurysms were measured and correlated with patients' characteristics, and proposed risk factors.

Results: VAA/VAPA were detected in 114 (54.0%). Majority had one (28.1%) and two (52.6%) aneurysms. The width of aneurysms was 1 cm (54.3%), 2 cm (36.2%) and 3 cm (9.5%); the length was < 3 cm (31.7%), 3-5 cm (45.7%), 5-10 cm (21.3%) and >10 cm (1.3%). Patients with VAA/VAPA were longer on hemodialysis (8.98±5.5 vs. 5.3±5.5 years) and had longer duration of actual vascular access (7.7±5.3 years vs. 3.2±3.8 years). Patients with- and w/o VAA/VAPA had similar calcification score (4.98±3.56), VA calcification score (1.06±1.05 vs. 1.21±0.9) and pulse wave velocity (9.6±2.5 vs. 10.4±2.5). Plasma iPTH was higher in patients with VAA/VAPA (537±611 vs. 414±471). 12 patients were operated (5.4%). The others were either asymptomatic or w/o possibility for alternative VA.

Conclusion: VAA/VAPA are usually asymptomatic. They are more frequent in patients with sHPT, with longer dialysis vintage and with older vascular access.

PP-092 - Hemodialysis, Apheresis, Artificial Organs**Outcome and Complications of Cuffed Hemodialysis Catheters Five Years Single Center Experience: A Retrospective Study**

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Background: Arteriovenous fistula, graft and cuffed central venous catheters (CVCs) are approaches for permanent vascular access (VA) in hemodialysis patients. Aim of this study is to assess factors that implicate patency rates and complications of cuffed central venous catheters (CVCs) in our hemodialysis unit.

Methods: We retrospectively analyzed 424 CVCs placed in 297 patients between January 2004- January 2009 in our hemodialysis unit.

Results: Mean age was 61.6±14.3 years. Median CVCs survival was 224.9±162.9 days. Significantly longest catheter survival was in right jugular vein (IJV). In diabetics catheter survival was significantly shorter. The most frequent both early and late complication was insufficient flow rate. Complication incidence was higher in subclavian placements. Early complication rates were similar according to causes of end-stage renal disease whereas all late complications were significantly more frequent in diabetics. CVCs related infections identified in 38 patient. Most frequent CVCs removal indication was late complications (%27.8).

Conclusions: CVCs may be useful alternative permanent VA for hemodialysis patients. Thus using CVCs is limited by higher complication incidence especially in diabetics, other treatment modalities should be preferred such as peritoneal dialysis. If it is required, right IJV should be preferred to insert.

PP-093 - Hemodialysis, Apheresis, Artificial Organs**Hemodiafiltration and Phosphate Removal in Patients with Chronic Renal Failure on Renal Replacement Therapy (RRT)**

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Introduction: The control of hyperphosphatemia by calcium- or aluminium-containing phosphate-binders leads to other complications like hypercalcemia, soft tissue/vascular calcifications, calciphylaxis. The application of non-calcium-non-aluminium-containing phosphate-binders and calcimimetics are both very expensive.

The aim of the study was to compare phosphate removal during pre- and post-dilutional on-line HDF as well as to compare phosphate removal during HDF with different volume of substitutional solution.

Patients and Methods: 13 RRT-patients were included in the study. 49 HDF were realised - 41 with substitution of 8600 ml and 8 - with 12000 ml(HDF-8600 and HDG-12000). Phosphate-Kt/v (Daugirdas 2nd generation) and phosphate-RR(%) were calculated.

Results: There is no difference between phosphate removal during pre- and post-dilutional HDF with substitution of 8600ml according to Kt/v.

Conclusions:

1. There is no difference between phosphate removal during pre- and post-dilutional HDF.
2. Phosphate removal is more effective in HDF-8600 compared to HDF-12000 ml.
3. During HDF phosphate removal is higher than during HD (18,06%), but this difference is not statistically significant.

Table 1. Phosphate removal during HD and HDF-Kt/v and RR (mean±SD)

	1	2	3	
	HD n=13	HDF-8600 n=41	HDF-12000 n=8	
Kt/v	0.775±0.29	0.915±0.27	0.689±0.009	1:2-p-NS 1:3-p-NS 3:2-p<0.05
RR(%)	45.692±14.223	51.900±10.81	43.62±5.87	1:2-p-NS 1:3-p-NS 3:2-p<0.05

PP-094 - Hemodialysis, Apheresis, Artificial Organs

Switching from Epoetin-B to Methoxy Polyethylene-Glycol-Epoetin-Beta (CERA) in Chronic Dialysis Patients: A Single Center One-Year Experience

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Objective: Methoxy polyethylene-glycol-epoetin-beta is a continuous erythropoietin receptor activator (CERA). Because of its long half-life, it can be administered once monthly.

Methods: We prospectively investigated n=65 patients on chronic hemodialysis, who were monitored for six months while treated with epoetin-beta and then switched to once monthly intravenous administration of CERA and followed up for another fourteen months.

Findings: The mean hemoglobin (Hb) values were similar before and after switching to CERA (11.37 ±1.1 vs. 11.42 ±1.0 mg/dl, ns). The target of Hb 11-12 mg/dl was achieved in 41.0% of the patient-months under CERA compared to 42.2% under epoetin-beta (ns). The incidence of "overshootings" (Hb >=13 mg/dl) was similar under epoetin-beta and CERA (0.053 vs 0.051 events pro patient-month, ns). However, a significant decrease in the incidence of "undershootings" (Hb <10.5 mg/dl) was observed after the first 6 months of CERA treatment (0.134 events pro patient-month vs 0.228 under epoetin-beta, p=0.050). The administration of both erythropoiesis stimulating agents was generally well tolerated and no serious side effects were observed.

Conclusion: Even in the first months after switching, treatment with CERA in chronic dialysis patients is as efficient and safe as epoetin-beta. After the initial adjustment phase less Hb cycling is observed.

PP-095 - Hemodialysis, Apheresis, Artificial Organs

Postoperative Hypoparathyroidism - Incidence and Risk Factors

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Background: Postoperative hypoparathyroidism (POHPT) after parathyroidectomy (PTx) is frequent but undesirable.

Objective: Analysis incidence and risk factors for development POHPT (PTH<150 pg/ml)

Patients and Methods: Single center, retrospective analysis of outcome of PTx in 26 patients (m=16, aged 21-68 y), treated by hemodialysis (HD) for 3-204 months prior PTx. Bone mineral parameters-BMP (Ca, P, Ca x P, AF, iPTH) and daily-dose calcitriol-ddCT were analyzed in pre- and 1, 12, 36 and 60 months after PTx. According to the last PTH value, patients were divided into G1(PTH<150) and G2(PTH>150).

Results: POHPT had 77% patients. Significant decrease in BMP was achieved after PTx in both groups, but iPTH decrease immediately in G1, and 36 months after PTx in G2. In comparison to G2, G1 patients were younger, shorter on HD, with lower preoperative BMP(NS). No difference was found in type of PTx, weight of parathyroid glands and pathohistological report; ddCT in 1m were significantly higher in G1 patients (0.69/0.17mcg/d). None of parameters was detected as predictor for POHPT by logistic regression analysis.

Conclusion: POHPT is frequent, but none of the examined variables could predict its appearance that limits the possibility of a better selection of patients for surgical SHPT care.

PP-096 - Hemodialysis, Apheresis, Artificial Organs

Thrombotic Thrombocytopenic Purpura: A Single-Centre Experience

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Background: The main objective of the present study were to describe the presenting characteristics, treatment regimen, and mortality rates of TTP patients treated with total plasma exchange (TPE) at our institution.

Methods: This study was a retrospective review of 13 adults patients with TTP-HUS treated with TPE at our institution from January 2004 to December 2007.

Results: The overall all-cause mortality rate was 31% (n = 4). The six month all-cause mortality rate for patients with idiopathic versus secondary TTP was 30% and 33%, respectively. There were no relapsed patients among the survivors during period of the study. Increased age, high creatinine and LDH levels at presentation were shown to be a significant risk factor for unresponsiveness in TTP patients in our study. The etiologic factors of our 3 secondary TTP patients were brucellosis infection, gastric malignancy and post-transplantation calcineurin inhibitor agent usage.

Conclusion: In conclusion, although mortality rates of TTP improved over the last 3 decades but they were still high according to modern therapy expectations. Etiology directed treatment should be added to TPE in secondary TTP cases.

PP-097 - Hemodialysis, Apheresis, Artificial Organs

Nutrition and Mortality Risk in Chronically Hemodialyzed Patients – Experience of a Single Transylvanian Center

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Aim: Malnutrition in chronically hemodialyzed patients (CHDP) is associated with cardiovascular morbidity and mortality. We followed the impact of some nutritional markers (NM) on general mortality in CHDP in Cluj area.

Method: A prospective cohort study of 126 CHDP was conducted (mean age 54, 9±12, 7 years, 64, 8% males, 8% diabetics). We recorded the clinical and laboratory data. Two groups were formed after two years of observation: group A–nonsurvivors, group B–survivors. We compared the NM as: body mass index (BMI), serum albumin (SA), predialytic serum creatinine (PSC), serum cholesterol (SC), between two groups and we calculated the death risk ratio (RR).

Results: NM were better in survivors patients (SA (g/dl) 4. 20±0. 34 vs 3. 85±0. 55, p<0. 001, BMI (Kg/m²): 24, 56±4, 35 vs 22, 0±3, 67 p=0, 01 PSC (mg/dl): 10, 51±2, 78 vs 9, 58±2, 73 p=0, 08). The RR was: for SA>4g/dl, RR=0. 63 p=0. 0005, for PSC>10mg/dl, RR=0. 81, p=0. 05), for BMI>18 kg/m², RR=0, 62 p=0. 07. Deceased number stratification showed the increase in deaths number: 2. 4-fold for BMI<18 kg/m², 2-fold for SA<4g/dl, 1. 8-fold for PSC<10mg/dl. For BMI>25kg/m² mortality rate was 1. 5-fold lower than for BMI<25kg/m². SC<150mg/dl and >200mg/dl were without impact in general mortality.

Conclusions: NM, especially proteic markers, were lower in nonsurvivors patients. Lower risk of death was associated with good nutritional status and a smaller deaths number occurred in overweighted patients. Hypoalbuminemia and low BMI doubled the deaths number.

PP-098 - Hemodialysis, Apheresis, Artificial Organs**Pregabalin in the Treatment of Uremic Pruritus**

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Objective: We evaluated the effect of pregabalin in the treatment of uremic pruritus.

Methods: Sixteen hemodialysis patients suffering from uremic pruritus resistant to conventional treatment started on pregabalin 25 mg/d orally. The parameters recorded were age, time on hemodialysis, hematocrit, Ca, PO₄, CaxPO₄ product, PTH, Kt/V, eosinophil counts and IgE. The effectiveness of pregabalin on uremic pruritus was evaluated by using Visual Analogue Scale before and after one month of treatment. Visual Analogue Scale consisted of a 10 cm horizontal line scored from 0 (no itch) to 10 (worst imaginable itch).

Findings: Four patients discontinued treatment due to side effects and therefore were excluded from the study. The mean age of the remaining 12 patients was 61.2±12.8 years. The time on hemodialysis was 38±39.1 months, Hct values 37.5±5.9%, Ca 9.4±5.9 mg/dl, PO₄ 5.5±2.1 mg/dl, CaxPO₄ product 50.9±17.7 mg²/dl², PTH 281±336 pg/ml, Kt/V 1.16±0.2, EOS 459±417.6/mm³ and IgE 37.3±41.8 IU/ml. There was a statistically significant difference between Visual Analogue Scale values before and after the one month treatment period (7.44±2.01 and 1.7±1.31 respectively), p<0.00001.

Conclusion: Uremic pruritus is a common and distressing symptom in patients undergoing hemodialysis. Pregabalin appears to be an effective alternative in the treatment of uremic pruritus.

PP-099 - Hemodialysis, Apheresis, Artificial Organs**Every Affliction Needs Care**

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Introduction: The aim of this study is to show the prevalence of syndrome carpal tunnel (CT) in our dialysis center. It should help solving the problem if the syndrome can be predicted by the routine examinations and if it can be a sign of hyperparathyroidism. Also it should help with the question about the treatment.

Method: 250 patients were observed in a period of 4 years. Physical examination was done, roentgen of hands and cervical vertebrae, EMG (electromyography), biochemical analyzes, iPTH (Parathyroid hormone-Elissa method), observing the affliction by BPI (Brief Pain Inventory), score for quality of life according to EQ-5D (European Quality of Life Questionnaire).

Results: Sy CT manifested in 42 (16, 8%) of 250 examined patients of which 25 (59, 5%) women. Roentgen changes: hands-50%; cervical vertebrae-7, 14%. EMG results:39 patients- (92, 8%)- time continuation in transmission of impulses through distal part of n. medianus and in 100% nephritic neuropathy. Biochemical analyzes:Calcium (1, 8-3, 2), Phosphor (1, 0-3), AP (60-900), iPTH (75-1200), 30 (71, 4%) of the patients have hyperparathyroidism, 10 (23, 8%) of them have their glands removed. BPI (6-8), (EQ-5D) encloses the highest level. 42 (100%) of the patients have bilateral, 5 (11, 9%) repeatable syndrome.

Conclusion: Sy CP must have multidisciplinary approach. It is a bilateral, repeatable complication, more frequent in females. The treatment is always surgical. The conservative treatment's length depends on individual pain level. It causes hard affliction and disruption of comfort. EMG gives truthful diagnoses. The syndrome can predict hyperparathyroidism. Sy CT is social problem. It does not cause death.

PP-100 - Hemodialysis, Apheresis, Artificial Organs**Follow-Up of Patients after Parathyroidectomy (PTX)**

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Introduction/ Aim: Secondary hyperparathyroidism is frequent complication among patients with ESRD. We retrospectively followed patients after sub-total PTX to reveal the outcome of treatment.

Results: Out of 408 patient, 52 underwent surgical treatment (age 52.8±8.9 years, dialysis vintage 9+4 years, 69.2% male, pre-PTX iPTH: 1265+684 pg/mol). Four gland (42.3%) were found in 22 patients, 2 and 3 glands in 9 (17.3%) and five in one patients, respectively. There were no surgical reports for 9 patients. Ultrasound of glands was in higher agreement with operative finding (in 66.6%of cases) as compared with scintigraphy (in 33%of cases). After mean follow up of 7+5.4 years, 31 (59.6%) patients had their iPTH in the range of adynamic bone disease and in 14 (26.9%) patients iPTH level remain above 300 pg/mol. After PTX, we observed significant reduction in serum phosphorus level and serum calcium normalized in 52% of patients. Muscle pain decreased in around 50% of patients and pruritus disappeared. Second operation was done in 4 patients. Patient with persistent hyperparathyroidism post-PTX was younger, with higher initial iPTH and had lower number of detected glands.

Conclusion: Different outcome after subtotal PTX require careful follow-up especially in younger patients with less than 4 detected glands.

PP-101 - Hemodialysis, Apheresis, Artificial Organs**Pericardial Thickening and Cardiac Valvular Calcification in End-Stage Renal Disease**

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Background: ESRD patients are at an increased risk of tissue calcification because of deranged calcium-phosphorus metabolism.

Aim: We have tested the hypothesis that pericardial fibrosis (PF) and thickness (PT) correlate with cardiac valvular calcification (VC) in ESRD-patients.

Patients and Methods: Echocardiography was performed in 23 ESRD-patients. PT was measured in the parasternal long-axis M-mode at the site of the posterior pericardium and VC at the sites of the aortic and mitral valve. All parameters were defined in 3 grade scores. Ca, phosphorus and CaxP product were measured.

Results: Virtually all patients had some degree of PT. The mean PT was 4.87±1.89 mm and correlations were as follows:

- PT and PT score with aortic and mitral VC scores - r =0.478 and 0.208, and r = 0.484 and 0.231 respectively;
- PT with CaxP product and HD-duration - r = 0.333 and r = 0.401, and PT score - r = 0.401 and r = 0.053 respectively;
- PT and PT score with all-cause 2-year mortality - r = 0.270 and 0.407 respectively.

Conclusions: The associations between PT and VC show weak-to-moderate correlations, but also might be yet another site for risk stratification of calcium burden deposition and prognosis in patients on HD.

PP-102 - Hemodialysis, Apheresis, Artificial Organs

Inflammatory Markers, PUFAs, and Atherosclerotic Parameters in the Prediction of Mortality in Haemodialysis Patients

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The prevalence of cardiovascular disease is high in haemodialysis patients. We evaluated inflammatory parameters in haemodialysis patients.

Forty-two patients (age 55, 1 ± 10years) from our unit were examined. We measured serum level of albumin, lipids, C-reactive protein (CRP), interleukin-6 (IL-6), tumor-necrosis factor alpha (TNF-alpha), iPTH and PUFAs and followed up these patients to determine the incidence and causes of death. Severity of atherosclerosis were examined by echo-coloured doppler study of carotid arteries. As control group we enrolled 30 healthy individuals.

Patients with severity atherosclerotic parameters had a higher mortality rate than those without. Serum levels of inflammatory markers, IL-6 (p=0.001), and CRP (p=0.001) were higher in patients who died during the follow-up period as compared with those who survived. The erythrocyte phospholipid PUFAs (EPA and DHA) were lower among patients who died than those who survived (p=0.01). IL-6 showed a positive correlation with intima-media thickness, and number of atherosclerotic plaques. By Kaplan-Meier survival analysis, elevated levels of serum CRP were a significant predictor of mortality. Differences in survival between patients with elevated vs low serum CRP levels (higher vs lower median CRP levels) were compared using the log rank test.

In conclusion, among these inflammatory markers serum level of CRP is the most significant predictor of mortality in hemodialysis patients.

PP-103 - Clinical Nephrology

Profiles of Our Hemodialysis Patients Requiring Parathyroidectomy

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Aim: Chronic kidney disease-mineral bone disorder (CKD-MBD) is a systemic pathology which not only causes bone abnormalities, but also vascular and other soft tissue calcifications leading to cardiovascular problems. Despite new developments in medical management of CKD-MBD such as sevelamer and vitamin D analogues, some patients still require surgical parathyroidectomy (PTX). We investigated the clinical follow-up of our hemodialysis (HD) patients who had PTX.

Methods: Clinical data of HD patients who underwent PTX between 06/01/2007-08/31/2009 at our center, is collected. SPSS16 is used for statistical analysis.

Results: Fourteen out of 148 regular HD patients (6 male, 8 female, ages 30-69 years) required PTX. The mean HD duration was 7.3 ± 3.9 years (3-22). Indications for PTX were hyperparathyroid bone disease in 11 (osteocalcin:308 ng/ml), calciphylaxis in 3 cases. Mean intact parathyroid hormone (iPTH) levels were 1580 pg/ml (510-3829) prior to operation. Twelve patients had total PTX (tPTX) without autotransplantation, 2 had tPTX with partial autotransplantation in the forearm. Intraoperative iPTH levels decreased 84% to a mean value of 146 pg/ml (44-340). Postoperatively all patients received vitamin D analogues and calcium. The patients did not have any clinical sign of bone disease after an observation period of 11 months (1-27) and first-week iPTH levels showed a strong correlation with the iPTH levels performed at their last control (p=0.000, r=0.94).

Conclusion: Since the use of calcimimetics increases, the need for PTX is assumed to be decreased in the coming years. However, considering the availability of this drug and the cost-effectiveness, we believe it is still early to decide which alternative is superior and yet in our small group of HD patients resistant to medical therapy, tPTX seems as a considerable alternative approach.

PP-104 - Hemodialysis, Apheresis, Artificial Organs

High Percent of Native AVF Creation during 6 Years Period-Single Center Experience

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Introduction: Native arteriovenous fistula (AVF) has been considered as the best choice for permanent vascular access in hemodialysis patients. Once it has matured into a useable access, the AVF has the longest survival rate with the fewest complications of any form of vascular access. The 2000 NKF-DOQI guidelines stated that creation of a primary AVF is possible in at least 50% of patients. Therefore, the synthetic polytetrafluoroethylene (PTFE) grafts were predominant form of permanent vascular access in USA for many years. On the other hand, prevalence of AVF as the primary access for hemodialysis in Europe was 80%.

Aim: Aim of the study was to analyse number and type of vascular accesses created in our center during six years period.

Method: Retrospective, single-center data analysis from our computerized patient record database. We identified patients who underwent vascular access construction from January 2003 to January 2009. General criteria for creation of native AVF included identifying (physical and Doppler examination) a vein of appropriate size >1.8mm and arterial diameter >= 1.6mm.

According to preoperative investigations, comorbid conditions and patient life expectancy, the place and type of vascular access creation were chosen.

Results: During 6 years period native AVF was preferred created vascular access for haemodialyses in our center, presented with more than 80%.

Type and number of created vascular accesses during 6 years period

	AVF	PTFE	PCTC	Σ
2003	38 (88%)	3	2	43
2004	99 (86%)	12	4	115
2005	76 (91%)	3	4	83
2006	81 (90%)	4	6	90
2007	73 (81%)	10	7	90
2008	56 (85%)	3	7	66

AVF- native arterio-venous fistula, PTFE- polytetrafluoroethylene grafts, PCTC- perm cath tunnel catheter

PP-105 - Clinical Nephrology

The Significance of hs-CRP as an Indicator of the Cardiovascular (CVS) Complications in Patients on Haemodialysis

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Introduction: Cardiovascular diseases are the primary cause of death in patients on haemodialysis. CRP of high susceptibility hs-CRP is a more reliable marker of cardiovascular complications as compared to the general CRP.

Aim: To determine the concentration of hs-CRP in patients on haemodialysis; To compare the concentration of hs-CRP in patients on haemodialysis with and without cardiovascular complications; To determine the frequency of cardiovascular complications related to the risk factors in patients on haemodialysis.

Material: The investigated group consisted of 45 patients who were being treated with repeated dialyses in GHospital "Stefan Visoki".

Results: The mean value of hs-CRP concentration in patients on haemodialysis was significantly higher as compared to the referential values. The Mann-Whitney test was carried out, which confirmed that there was no statistically significant difference between the patients with and without CVS complications (p>0.05); Considering the risk factors, the following results were obtained: out of 22 patients with CVS complications 27.7% were smokers, 100% had HTA, 13.64% were diabetics and 36.36% had HLP.

Conclusion: The incidence of CVS complications in patients on haemodialysis is connected to the high prevalence of traditional and non-traditional risk factors; therefore, the frequency of CVS complications can be reduced by affecting them.

PP-106 - Hemodialysis, Apheresis, Artificial Organs

Comparison of First Cannulating Time, Life of Fistulas and Dialysis Adequacy in Diabetic and Non Diabetic Patients

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In a prospective study A-V fistulas are investigated by early cannulation, life of fistulas, dialysis adequacy. Between the dates of 15.01.2005-15.12.2008 390 A-V fistula operation were done. 120 (%30,7) were diabetic, 270 (%69,3) non-diabetic.

There were no significant differentiations between diabetic, non-diabetic group by age, gender fistulated arm, tecniqne, localisation of fistula. A-V fistulas have low complication rate, simple ways of vascular accees. New fistulas we do vascular mappping, first access were done uper side of fistulas (exp antecubital as artery) and a suitable vein from other arm as vein. Caring of hypotension, by low blood-pump rate. This provide us from higer cost by catheteritation, also complications.

Fistulas survey in diabetic patients (0-24 hrs group) are % 97,4, %90,9, %84,6 in 1,6,12 months. In control group (catheter, waited for fistula maturation) are %90,2 %80,6 %68,2 in the same months (P>0,05).

Fistulas survey in non-diabetic patients (0-24 hrs group), % 96,2, %94,4, %90,7 in 1,6,12 months. In control group (catheter, waited for fistula maturation), %81,4, %68,7, %57,9 in the same months. (P=0,0009, p=0,00001, p=0,00001). By Kt/V; First 24 hrs group (20 diabetic, 41 non-diabetic), p>0,05 Catheters (12 diabetic,33 non-diabetic), p>0,05. Waited group 2-7 days (8 diabetic, 20 non-diabetic), p>0,05. If there is endugh maturation, good flow-rate of vein, we make early access by obeying the other rules.

Table 1

	AGE		GENDER		ARM OF FISTULA		LOCALISATION					
	YOUNGEST	OLDEST	AWARAGE	MALE	FEMALE	RIGHT	LEFT	snuff-box	bresc-cimio	ulna-bazilik	ante-cubital	end to end
DIABETIC (120 PATIENT)	17	85	62,4	68 56,7%	52 43,4%	54 45%	66 55%	87,1%	91 75,2%	0,0%	21 17,7%	0%
NON-DIABETIC (270 PATIENT)	12	95	58	152 56,3%	118 43,7%	108 40,0%	162 60,0%	176,3%	197 72,9%	5 1,9%	51 18,9%	1 0,4%

Properties of fistula operations

FIRST CANNULATION TIME OF 120 DIABETIC PATIENTS

FIRST CANNULATION	0-3 HRS	4-24 HRS	BY CATHETER	2-7 DAYS WAITED GROUP	Prematuration for predialysis 2 weeks- 6 mnths	NON FALLOWED
NO OF CASES	18	24	41	23	11	3
PERCENTAGE OF CASES	15,0%	20,0%	34,1%	19,2%	9,2%	2,5%

Earliest cannulation 10 min, latest 6 mounth with permanent catheter. In first 24 hrs 42 patients (%35,0) were taken to dialysis by new fistulas. 65 patients (%54,2) were taken to dialysis by new fistula in first 7 days after operation.

FIRST DIALYSIS TIME OF 270 NON-DIABETIC PATIENTS

CANNULATION	0-3 HRS	4-24 HRS	CATHETER	WAITED GROUP 2-7 DAYS	Prematuration Predialysis, 2 week-6 mnt	NON FALLOWED
NO OF CASES	48	60	89	40	21	12
PERCENTAGE	17,8%	22,2%	33%	14,8%	7,8%	4,4%

Earliest cannulation in 15 min, latest in 6th month by permanent catheter. 108 patients were taken to dialysis in first 24 hrs. (%40,0) by new fistulas. 148 patients (%54,8) were taken to dialysis in first 7 days by A-V fistulas.

PP-107 - Hemodialysis, Apheresis, Artificial Organs

A Case Report of a Hemodialysis Patient with Sickle Cell Anemia and Ascites

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Sickle cell disease (SCD) is an autosomal recessive, chronic hemolytic disorder with many acute and chronic complications. Sickling of red cells in various parts of the body causes acute and chronic ischemia leading to progressive tissue damage. Virtually any organ of the body may be affected including the kidneys. Nephropathy in patients with sickle cell anemia can be manifested by proteinuria and, more rarely, nephrotic syndrome.

Chronic renal failure, although infrequent, may be one of the manifestations of this disease. Hemodialysis and transplantation are the therapeutic options for patients with end-stage renal disease.

A 54 years patient with sickle cell anemia is presented in our center on end-stage renal disease with severe ascites. The patient was in hemodialysis 3 times at week but with no regression of ascites. Paracentesis was performed every 10 days for releasing abdominal tension.

For defining the etiology of ascites we made several examinations:complete blood count,eritrosedimentation, CR-Protein, liver and pancreatic enzymes,protein level, albumine, electrolytes, tumors markers, serum -ascites albumin gradient, abdominal and cardiac ultrasound, abdominal thoracal CT-scan, fibrogastrosocopy, colonoscopy, investigation for tuberculosis. After all examinations no specific result was found.

The patient is treated with spironolactone 100 mg/day and furosemide 80 mg/day, hemodialysis 3 time at week and paracentesis every 10 days for approximately 1 year.

PP-108 - Hemodialysis, Apheresis, Artificial Organs

HHV-6 Infection in Hemodialysis and Peritoneal Dialysis Patients

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Introduction: HHV-6 infection occurs worldwide and can be reactivated from latency in periods of immunosuppression. There is no previous study evaluating the influence of the dialysis type on HHV-6 infection. The aim of this study was to determine prevalence of HHV-6 antibody in HD and PD patients.

Patients/Methods: We studied 36 PD patients, 35 HD patients and 20 volunteers. After the systematic interrogation and physical examination, blood was drawn and biochemical parameters and CMV IgM, IgG, HBsAg, antiHCV and anti-HIV antibody were studied. HHV-6 IgM and IgG titers were determined by the ELISA.

Results: HHV-6 IgM antibody was positive in nine patients (25.7%) of HD group, 8 patients (22.2%) of PD group and 2 patients (10%) of control group (p<0,05). The presence of HHV-6 IgG antibody was higher in HD patients (20%) than PD patients (5.6 %) and control subjects (0%) (p= 0.069 and p= 0.034). In HD patients, there was positive correlation between HHV-6 IgG seropositivity and duration on dialysis (R= 0.33, p=0.05).

Conclusion: HHV-6 infection is not rare in PD and HD patients. In addition HHV-6 IgG seropositivity was higher in HD patients than PD patients and it is correlated with the duration of dialysis.

PP-109 - Clinical Nephrology

Quality of Dialysis Modalities

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Renal professionalists cannot solve the dialysis dilemma of epidemic growth and high costs, but we do have an obligation to seek the best ways to treat more patients with the highest quality therapies, for the lowest level of public expenditure.

In some developing countries the least expensive dialysis modalities is used. Most Western European nations predominately utilize HD, especially if there is a private or mixed public and private dialysis system.

Because modality mix is an important determinant of costs may impact on patient outcomes and quality of life, there is an urgent need to better define the optimum modality distribution. This vary between and within countries, depending upon population density, or demographics factors.

The economic perspective and interests of patients, physicians, facilities industry and society are different, and may actually be in conflict. Sensible solutions will seek to align these interests and incentives in order to foster the evolution of a cost effective, balanced system that allows patients informed choice amongst the various dialysis modalities, and witch encourages, but does not force, suitable patients to select a less expensive, home based therapy. Early referral to a nephrologist has been shown to impact upon modality selection in precisely this way.

PP-110 - Peritoneal Dialysis

Evaluation of Salivary Gland Functions in Continuous Ambulatory Peritoneal Dialysis Patients by 99mTc-Perthchnetat Scintigraphy

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Background: The purpose of this study was to evaluate the alterations in salivary gland functions in patients who receiving continuous ambulatory peritoneal dialysis (CAPD) for chronic renal failure (CRF) using technetium-99 m perthchnetat (99mTc-P) salivary gland scintigraphy.

Methods: The study population consisted of 36 CAPD patients (16 males and 20 females, ranging in age from 19 to 73 years, mean age 44. 94 ± 15. 01 years) and 20 healthy controls (11 males and 9 females, ranging in age from 31 to 51 years, mean age 41. 25 ± 5. 62 years). All patients and healthy controls underwent salivary gland scintigraphy. After the intravenous administration of 185MBq of 99mTc-P, dynamic salivary gland scintigraphy was performed for 25min. On the basis of the time-activity curves, the following glandular function parameters were calculated for the parotid and submandibular salivary glands: uptake ratio, maximum accumulation, and ejection fraction.

Results: Our results showed: All functional parameters obtained for CAPD patients were significantly lower than for healthy controls (P<0. 05).

Conclusion: In conclusion, this study demonstrated that salivary gland function, an important determinant of oral health, is impaired among the CRF patients treated with CAPD compared with healthy controls, as evaluated by 99mTc-P salivary gland scintigraphy.

PP-111 - Peritoneal Dialysis

Peritonitis in Chronic Ambulatory Peritoneal Dialysis Patients in the Last 10 Years at Our Clinic

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Aim: We aimed to determine frequency clinical and microbiological characteristics of CAPD-related peritonitis episodes in CAPD patients who were being followed at our clinic.

Methods: Patients with CAPD-related peritonitis were evaluated and peritoneal fluid samples were cultured. 627 CAPD patients were presented with peritonitis. Dialysis effluents were taken out from bag in a sterile condition with povidion solution. In CAPD patients with peritonitis we empirically administer 2 gr intraperitoneal vancomycin at first and 8 th days and night change 100 mg/day amikacin IP added. If culture results yield specific bacteria and fungi we evaluate the treatment according to antibiogram.

Results: During study period, 234 CAPD patients were presented with 388 episodes of peritonitis. We incubated peritoneal dialysis fluids with BACTEC aerobic, EMB and blood agar. 175 of 388 dialysis fluid sample cultures were positive (45.1%). The most common microorganisms were S. Aureus (32%) and coagulase-negative staphylococci (29.7%). The detected microorganism responsible for peritonitis episodes were gram positive in 134 cases (76.6%) and gram negative in 32 cases (18.3%). We could not detect any pathogen in 54.9% of cases.

Conclusions: At our clinics peritoneal fluid culture was positive in 45.1% of cases. The most patients were treated successfully.

Microorganism of peritonitis episodes

Microorganism	Number of culture positive patients
Gram positive microorganisms	134 (%76.6)
Staphylococcus aureus	56
Coagulase negative staphylococcus	52
Diphtheroid bacillus	11
Streptococcus spp.	3
Enterococcus	6
Pneumococcus	2
Staphylococcus epidermidis	3
Gemella morbillorum	1
Gram Negative Microorganism	32 (%18.3)
E.coli	7
Klebsiella	7
Pseudomonas	2
Enterobacter spp.	8
Neisseria	3
Achinobacterium	4
Morganella morgagnii	1
Mycobacterium	4 (%2.3)
Mycobacterium tuberculosis	4
Fungal	5 (%2.8)
Candida	5

PP-112 - Peritoneal Dialysis**The Evaluation of Risk Factors for Early Mortality on Continuous Ambulatory Peritoneal Dialysis Patients: A Single Center Experience**

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Background: Continuous ambulatory peritoneal dialysis (CAPD) is a renal replacement therapy modality for patients with end-stage renal disease (ESRD). Mortality in the ESRD patients on CAPD therapy is 10-30 folds higher than in general population. The aim of this retrospective study was to determine the importance of patient and treatment characteristics to early mortality on CAPD patients.

Methods: Records for a cohort of 504 patients who started on CAPD during 1999-2008 were retrospectively analysed for survival in the first year on dialysis. We enrolled 60 patients (group 1) that died during the 1-year follow-up period on CAPD and 60 patients (group 2) that randomly selected for 504 CAPD patients that survived more than 1-year following initiation of CAPD.

Results: Mean age at the start of PD was 63. 57 ± 14. 32 years in group 1 and 58. 57±18. 02 years in group 2 (p=0. 035). Diabetes mellitus was the most common cause of end-stage renal disease (22%), followed by hypertension (14. 7%) in group 1. Table 1 shows the demographic, clinical and laboratory parameters of the patients.

Conclusion: We conclude that age, CVD, hypoalbuminemia, peritonitis rate and residual renal function are important factors for early mortality on CAPD patients.

Comparison of the Parameters between Groups

Parameters	Group 1	Group 2	p
Mean age (years)	63.57 ± 14.32	58.57±18.02	<0.05
Diabetes mellitus (%)	22	18	>0.05
Cardiovascular Disease (%)	44	22	<0.05
Hypertension (%)	38	343	>0.05
Albumin (mg/dL)	3.32±0.54	3.89±0.72	<0.05
Hematocrit (%)	32.7±5.3	33.3±4.5	>0.05
Gender Male/Female (n)	35/25	37/23	>0.05
Residual renal function as GFR	25.3±8.5 L/week/1.73 m ²	35.3±6.5 L/week/1.73 m ²	<0.05
Episodes of peritonitis/patient-year	0.67±0.75	0.52±0.62	<0.05
Serum creatinine (mg/dL)	8.5±3.9 mg/dL	7.9±3.4 mg/dL	>0.05
Serum Ca ²⁺ P	47.3±14.1 mg/dL	44.3±13.2 mg/dL	>0.05

PP-113 - Peritoneal Dialysis**Clinical Outcomes of Peritoneal Dialysis Patients at Secondary State Hospital Nephrology Clinic: Similar Results to Tertiary University Hospital**

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Aim: We present our experience with clinical outcomes, and factors affecting mortality in peritoneal dialysis patients at the our secondary state hospital nephrology clinic.

Methods: Outcomes were analyzed for 313 patients, excluding those younger than 15 years of age at initiation of peritoneal dialysis, those having less than 3 months' follow-up. The demographic, clinical, and biochemical data were collected from the medical records.

Results: Mean age at the start of PD was 51. 9 ± 17. 6 years and mean peritoneal dialysis duration was 27. 5 ± 27. 1 (median: 20, range:3-166) months. Hypertension was the most common cause of end stage renal disease (36. 1%), followed by diabetes mellitus (31. 3%). 58 patients (18. 5%) were died. Patient survival were 93. 3%, 85%, and 72. 4%, at 1, 3, and 5 years, respectively. Higher education level (p=0. 045), lower age (p=0. 002), higher creatinine (p=0. 045), lower albumin (p=0. 003) were found to affect patient survival. Technique survival were 89. 1%, 84% and 74. 1% at 1, 3, and 5 years, respectively. Technique failure was associated with peritonitis rate (p=0. 03).

Conclusion: Our results suggest that patients and technique survival rates, and the factors affecting mortality in our patients are similar those at the tertiary care university hospital nephrology clinic in Turkey.

PP-114 - Peritoneal Dialysis**Extended Darbepoetin Alfa Dosing in CAPD Patients: A Single Center Experience**

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Objective/Aim: The purpose of the present study was to analyze the efficacy of extended dosing of darbepoetin (DA) in CAPD patients. **Method:** By this cross-sectional study we examined all CAPD patients (march 2009) on DA undergoing peritoneal dialysis for at least 6 months. Patients had adequate iron stores.

Findings: Study included 27 patients (42. 2% of CAPD population); 66. 7% men, 33. 3% women; mean age: 67. 0±9. 2 years; 11. 2% with diabetes; DA treatment: 14. 3±5. 2 months. Out of all, 70. 4% of patients received DA in two-week interval and 29. 6% once monthly. The maintenance dose was 0. 44 µg/ kg/ week (0. 18-1. 13 µg/ kg/ week). Pre-treatment haemoglobin level was 9. 0±0. 66 g/dl (7. 8-10. 0 g/dl) and the mean haemoglobin level in maintenance phase was 11. 7±0. 77 g/dl (10. 0-12. 6 g/dl) with only 1-3 dose changes. No relationship was observed between the weekly maintenance dose of DA and hsCRP, Kt/V, iPTH and comorbidity. Different dosing interval depended on initial Hb value, time to establish target Hb and number of dose changes.

Conclusion: Dosing regimen of DA in CAPD patients depend on patient characteristics; monthly dosing is method of choice since it reduces the nursing time and improves patients' compliance/QoL.

PP-115 - Peritoneal Dialysis**Commencing Peritoneal Dialysis with 1.1% Amino-Acid Solution does not Influence Biochemical Nutritional Parameters in New CAPD Patients**

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Objective: To evaluate the influence of 1.1% amino acid dialysis solutions on nutritional parameters in new continuous ambulatory peritoneal dialysis (CAPD) patients.

Methods: The effect of daily use of 1.1% amino-acid solution was studied retrospectively in 32 new CAPD patients (14 women and 18 men, mean age 54±13 years) who began CAPD at our tertiary university hospital between July 2005 and February 2009 (AAS group). Serum total protein, albumin and creatinine were assessed for all patients prior to dialysis and at the end of the study period. Thirty-two control patients (12 women and 20 men, mean age 52±14 years) who started peritoneal dialysis with a standard CAPD program were also investigated and grouped as the dextrose solution (DS) group.

Results: At the end of the 12 month follow-up period, mean serum albumin levels had decreased from 3. 4 g/dL to 3. 3 g/dL in the AAS group (P = 0. 218) and increased from 3. 7 mg/dL to 3. 8 g/dL in the DS group (P = 0. 360). Overall, no significant changes were observed in serum total protein, creatinine, or albumin in either group.

Conclusions: Amino-acid solutions conferred no demonstrable benefit on biochemical parameters in new CAPD patients.

PP-116 - Peritoneal Dialysis

Analysis of Factors Affecting Mortality on Peritoneal Dialysis Patients; 10 Years' Experience in a Single Center

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Background: Continuous ambulatory peritoneal dialysis (CAPD) is an alternative renal replacement therapy for patients with end stage renal disease (ESRD). A very high rate of mortality is well recognized in individuals with ESRD compared to healthy population. We aimed to reveal the factors affecting mortality in patients who died during CAPD treatment.

Patients and Methods: The demographic, clinical and laboratory features of 96 patients who died during the first 5 years and of 85 patients who survived ≥ 5 years among 504 patients who underwent CAPD between 1999-2008 in our clinic were assessed. The data obtained in this research were compared in 2 groups of patients.

Results: Table 1 shows demographic, clinical and laboratory features of patients.

Conclusion: The mean age of patients who died within the first 5 years was higher compared to those who survived. On the other hand CVD and diabetes incidence were also higher in the patient group who died. Likewise, serum albumin level and residual renal clearance were significantly lower in the patient group who died within the first 5 years than those who survived. Also peritonitis frequency was significantly higher among the patient group who died.

Demographic, clinical and laboratory features of patients.

Parameters	Group 1	Group 2	P
Mean age (years)	60.17± 16,80	55,21±17,04	<0.05
Diabetes mellitus (%)	34	17	<0.05
Cardiovascular Disease (%)	43	21	<0.05
Hypertension (%)	38	34	>0.05
Albumin (mg/dL)	3.24±0.69	3,55±0.53	<0.05
Hematocrit (%)	33.7±6.3	34.3±6.5	>0.05
Gender Male/Female (n)	52/44	45/40	>0.05
Residual renal function as GFR	15.3±6.2 L/week/1.73 m ²	24.3±6.5 L/week/1.73 m ²	<0.05
Episodes of peritonitis/patient-year	0.68±0.74	0.57±0.68	<0.05
Serum creatinine (mg/dL)	8.3±3.6 mg/dL	7.7±4.2 mg/dL	>0.05
Serum Ca ^x P	48.2±13.4	46.7±14.2 mg/dL	>0.05

PP-117 - Peritoneal Dialysis

Clinical Outcome of Elderly Peritoneal Dialysis Patients: Single Center Experience

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Elderly end stage renal disease patients have many comorbid conditions that may influence outcome of peritoneal dialysis treatment (PD). The purpose of this study was to evaluate the clinical outcome and to identify predictors of mortality in our elderly patients on PD.

Sixty-five patients (40F, mean age 67, 5±6, 4 years, mean follow-up 27, 6±22. 5months) older than 60 years who started PD treatment between 2002-2009 years were evaluated retrospectively. Fifty-four of them (group1:drop-out) (32F, mean age 68, 5±6, 5years) were withdrawn from treatment, other 13 patients (8F, mean age 62, 6±2, 8 years) were still under follow-up (group2:Treatment). Forty-one patients were died, ten patients transferred to haemodialysis and 3 patients were lost to follow-up in group1. The most common causes of death were cardiac events (46%), peritonitis and/or sepsis (35%). Whereas transfer to HD were due to peritonitis (60%) and to insufficient PD (40%). The two groups were compared in the table.

We found positive correlation between mortality and age, and mandatory PD due to vascular access problems, duration of haemodialysis before PD (p:0. 000, 0. 000, 0. 01; r:0. 44, 0. 52, 0. 56, respectively). Negative correlation was found between mortality and follow-up time, pretreatment serum albumin, peritonitis, exit site infection, and Kt/Vurea (p:0. 001, 0. 01, 0. 004, 0. 002, 0. 04; r:-0. 42, -0. 33, -0. 37, -0. 40, -0. 33, respectively). We found negative correlation between mortality and serum albumin, systolic and diastolic blood pressures in the last follow-up (p:0. 01, 0. 04, 0. 009 and r:-0. 32, -0. 28, -0. 35 respectively).

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Conclusion: Cardiovascular events and infections were the most important causes of drop-out and death in elderly PD patients. Infections, lower serum albumin levels and history of haemodialysis before PD were found to increase mortality in elderly PD patients.

Table 1: Demographic, laboratory parameters of patients.

	Group1 (n:54) (drop-out)	Group2 (n:11) (treatment)	p
Follow-up time(month)	23,4±20	44±25,6	0,028
Number of haemodialysis patients before PD	14	6	0,09
Duration of haemodialysis(month)	65,5±15,3	15,3±33,6	0,03
Cardiothorasic index(%)	51±0,4	50±0,6	0,60
Pretreatment urine(ml/day)	284±365	272±331	0,92
Pretreatment systolic BP(mmHg)	117±30	119±23	0,87
Pretreatment diastolic BP(mmHg)	71±14	71±13	0,91
Last systolic BP(mmHg)	98±26	115±27	0,07
Last diastolic BP(mmHg)	62±14	72±11	0,059
Pretreatment Albumin(g/dl)	3,38±0,5	3,7±0,2	0,059
Pretreatment calcium(mg/dl)	8,9±1,0	9,6±0,6	0,015
Peritonitis incidence(month)	17,8±16,6	22,8±19,7	0,39

PP-118 - Peritoneal Dialysis

Clinical Features of Chronic Peritoneal Dialysis Patients Admitted to an Intensive Care Unit

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Background: Peritoneal Dialysis (PD) patients usually present multi-organ dysfunction from pre-existing medical problems and complications secondary to dialysis. However data on PD patients admitted to intensive care unit (ICU) is scant. In this study, we aim to determine the demographic and clinical characteristics of the PD patients admitted to ICU.

Methods: All critically ill PD patients referred to the 7 bed medical ICU at a university hospital between January-2008 and June-2009 were included in this retrospective study. Demographics, primary renal disease, cause of admission, presence of mechanical ventilation, ICU mortality and survival status 3 months after discharge were recorded.

Results: A total of 13 admission of 10 patients were included. Demographic and clinical data are shown in table 1. The mean ICU length of stay 10. 1±7. 1 days. Mechanical ventilation was required in 9 admission. Mean duration of mechanical ventilation was 6. 8±6. 5 days. ICU mortality was 7/13 (53. 8 %) and it was associated with age (p=0. 035). The 3-month survival rate was 3/13 (23%).

Conclusion: PD patients admitted to ICU have high mortality rate. Our findings provide that old age is the most reliable prognostic factor for ICU mortality. Early diagnosis and management of infection and fluid overflow can be prevent to ICU admission.

Table 1. Demographic and clinical characteristics of the PD patients

	PD patients
No.	10
Age (Years)	56.6±23.6 [range: 29-82]
Sex (F/M)	6/4
Primary renal disease (n)	
Diabetic nephropathy	3
Amiloidosis	2
Hypertensive nephropathy	1
Glomerulonephritis	1
Undetermined	3
Previous duration of PD (months)	49±47.5 [range:1-144]
ICU indications (n)	
Sepsis	6
Fluid overflow	6
Gastrointestinal bleeding	1

PP-119 - Peritoneal Dialysis

Mortality Patients Treated by Peritoneal Dialysis and Haemodialysis in Relation to Metabolic Changes

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Aim: The aim of this study was to determine the impact of metabolic disorders on mortality in patients treated on peritoneal dialysis and haemodialysis.

Methods: The study analyzes outcome of clinical treatment 407 dialysis patients, in the four years period, demographic and anthropometric characteristics, duration of dialysis, smoking, residual renal function, existence of metabolic syndrome and malnutrition, comorbidity and routine biochemical parameters.

Results: Total mortality of respondents was 53%. Mortality rate in patients on HD was 37% and in patients on PD 65%. Metabolic syndrome was predictive parameter of mortality (Beta=0. 560; p=0. 045) in HD patients. PD patients reflected equal level of metabolic disorders, while a significant indicator of mortality is body weight index (Beta=0. 088; p=0. 002) and the waist girth (Beta=0. 023; p=0. 031). The survival median is higher with HD patients (95%CI 65-151). Residual renal function on PD patients is significant parameter of mortality (p=0. 045).

Conclusion: Metabolic syndrome is predictive parameter mortality on HD patients. Preserved residual renal function in patients on PD is an important factor in reducing mortality.

PP-120 - Peritoneal Dialysis

Sertraline Treatment is Associated with an Improvement in Depression and Quality of Life in Chronic Peritoneal Dialysis Patients

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Aim: We aimed to determine prevalence of depression, its association with QOL and effects of sertraline treatment.

Methods: We included 124 PD patients who had been on PD at least for 6 months. Short Form of Medical Outcomes Study was used to evaluate QOL. Depression was screened by Beck Depression Inventory (BDI). Patients, whose BDI score ≥ 17 were deemed to have depression. 24 patients who diagnosed with clinical depression agreed to receive anti-depressive treatment (Sertraline hydrochloride, 50 mg/day) for an 12-week-period. After the treatment, biochemical analyses and questionnaires were repeated.

Results: Thirty-two patients (25. 8%) had depression. BDI scores of patients were lower compared to those without depressive symptoms ($23 \pm 6. 7$ and $9. 8 \pm 3. 0$ respectively p<0. 001). Physical component scale (PCS) and mental component scale (MCS) domains related to QOL were significantly decreased in patients with depression than in patients without depression (p< 0. 001 for PCS and MCS). In bivariate analysis; the BDI scores was correlated negatively with the PCS and MCS (p < 0. 001). Sertraline treatment improved BDI scores of patients with depression (p < 0. 001). QOL parameters also improved.

Conclusion: Treatment of depression with sertraline is associated with improvement of the symptoms related to depression and QOL.

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Baseline characteristics of chronic peritoneal dialysis patients with and without depression.

	Patients with depressive symptoms (n:32)	Patients without depressive symptoms (n:92)	p
Age (years)	53.7± 14.6	52.2 ± 14.2	0.593
Gender (male/female)	13/19	46/46	0.360
Duration of PD (months)	6 ± 27.2	34.1 ± 26.5	0.729
CAPD/APD (n)	28 (87.5%)/4 (12.5%)	82 (89.1%)/10 (10.9%)	0.803
Smoking (yes)	11 (18.8%)	6 (12%)	0.338
BDI scores	23 ± 6.7	9.8 ± 3.0	<0.001
PCS	36.8 ± 13.4	59.4 ± 16.6	<0.001
MCS	44.2 ± 13.9	64.8 ± 14.0	<0.001
Hemoglobin (g/dL)	11.0 ± 1.6	11.5 ± 1.6	0.159
Albumin (mg/dl)	3.7 ± 0.4	3.8 ± 0.4	0.687
CRP	22.6 ± 11.7	20.5 ± 14.3	0.463
Kt/V	21.4± 0.4	2.0 ± 0.5	0.602
Creatinine (mg/dL)	7.0 ± 2.3	7.6 ± 2.9	0.287
Calcium x phosphorus	38.9 ± 12.9	38 ± 12.33	0.181
iPTH	516.6 ± 487.8	428.3 ± 375.1	0.532

Changes in BDI scores and different QOL parameters after antidepressive

	Baseline (n:24)	After treatment (n:24)	p
BDI scores	22.4 ± 6.5	15.7 ± 5.2	<0.001
PCS	37.2 ± 12.8	50.3 ± 15.6	0.007
Physical Functioning	40 ± 29.5	60.4 ± 27.2	0.060
Role-Physical	7 ± 11.5	16.0 ± 26.9	0.470
Bodily Pain	65 ± 25.9	75.4 ± 19.3	0.172
General Health Status	29.7 ± 14.9	37.7 ± 16.3	0.102
MCS	45.2 ± 13.2	57.2 ± 14.7	0.006
Vitality	38.2 ± 13.7	52 ± 11.3	<0.001
Social Functioning	67.5 ± 24.2	71.6 ± 29.1	0.476
Role-Emotional	29.3 ± 32.4	58.7 ± 30.8	0.003
Mental Health	57.3 ± 11.9	53.4 ± 10.4	0.048

PP-121 - Peritoneal Dialysis

The Relationship between Peritoneal Leukocyte Count, Culture and Clinical Results in Peritonitis Among Peritoneal Dialysis Patients

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Introduction: An important complication of peritoneal dialysis (PD) is peritonitis. The correlation between the initial polymorphonuclear leukocyte count (PLC) and culture results with inflammation, nutrition, microbiological parameters and the clinical outcomes of the patients was investigated.

Methods: Patients with peritonitis for the first time and had been PD patient for at least six months with PET performed both before and after the episode constituted the study group. The demographic characteristics, laboratory parameters, cell count in effluent, culture results, response to treatment and response time were recorded. The pre-and-post-peritonitis levels of CRP, ESR, serum cholesterol, triglyceride, and albumin were also recorded. Statistical analyses were performed using SPSS for Windows version. 13. 0.

Results: 70 (35 males) patients were included (mean age: 45. 1±13. 5years). Catheters had to be removed in 7 (10. 0%) whereas 60 (85. 7%) patients responded to treatment and 3 (4. 3%) died. Initial PLCs were 3269±4428/mm³. Culture was positive in 25 (35. 7%) patients and they had significantly higher PLC than culture negative patients. CRP increased significantly after the peritonitis. Positive culture results and initial PLC showed correlation with response to the treatment.

Conclusions: Positive culture results, high PLCs, should be considered as risk factors for catheter loss and mortality in PD. Moreover, CRP may be a better marker than ESR in the follow-up of peritonitis.

PP-122 - Peritoneal Dialysis

Correlation between Type of Dialysis Solution and Cardiovascular Morbidity in Patients Undergoing CAPD

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We aimed to evaluate the cardiovascular changes in CAPD patients and existing differences depending of biocompatibility of dialysis solutions (DS). After 3±2 years of start, 21 CAPD patients treated with conventional DS (CAPD-1, 47. 43±12. 87 years old) and 21 CAPD patients treated with biocompatible DS (CAPD-2, 68. 62±13. 98 years old), participated in a cross-sectional study. Control group (CG) included 21 patients with preterminal phase of CRF (65. 29± 13. 74 years old). All patients underwent transthoracic echocardiography and B-mode ultrasonography of common carotid artery (CCA). EF was: 62. 05±5. 65% in CAPD-1; 53. 43±7. 47% in CAPD-2; and 56. 71±8. 12% in CG (p= 0. 001). LVH was detected in: 47. 6% in CAPD-1; 61. 9% in CAPD-2; and 52. 4% in CG (p=0. 639). Valvular calcifications were detected in: 52. 4% in CAPD-1; 42. 9% in CAPD-2; and 23. 8% in CG (p=0. 776). IMT was: 1. 26±0. 54mm in CAPD-1; 1. 23±0. 32 in CAPD-2; and 1. 25±0. 27mm in CG (p=0. 981). Average lumen narrowing of CCA was: 13. 7±18. 2% in CAPD-1; 18. 5±22. 9% in CAPD-2; and 25. 00±28. 02% in CG (p=0. 413). Calcified plaques of CCA were detected in: 61. 9% in CAPD-1; 85. 7% in CAPD-2; and 81% in CG (p=0. 159). Patients start CAPD treatment with advanced cardiovascular morbidity. It's progressive and multifactorial process that are not prevented using biocompatible dialysis solutions.

PP-123 - Peritoneal Dialysis

A Chronic Peritonitis - A Consequence of a Perforation of a Small Intestine during Insertion of a Peritoneal Catheter

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A male, Caucasian, 73 yrs. old, was closely monitored in our polyclinic, during a period of three years. He was diagnosed w/ a CKD, stage III. The basic kidney disease is a nephrangio sclerosis (verified by PHE). In Feb 2007. he had an operation due to perforated duodenal ulcer. After that his creatinine serum levels were around 300 umol/L until June 2008 when he underwent an inguinal hernia surgery. Since then the patient has developed the end stage of CKD. The attempt of creation of AVF has failed. On 6 October 2008 a peritoneal catheter was placed and the CAPD treatment has began. He was undergoing a CAPD treatment until July 2009. In the period of Nov. 2008 until May 2009 the patient experienced four episodes of an acute peritonitis. During the last diagnostic procedure the Pseudomonas aeruginosa was isolated. The extraction of the peritoneal catheter was recommended, but it was rejected by the surgeon, until the infection is eradicated. Due to the an acute abdomen onset, the laparotomy was a must. Intraoperatively, a formless intestinal mass was found as well as the proximal portion of the peritoneal catheter (the length of was 15 cm) located in the small intestine. The patient passed away on 21 July 2009 at our hospital ICU. He was in coma due to a sepsis.

Conclusion: We think that if a laparotomy precedes the CAPD, the peritoneal catheter insertion must be done by means of laparoscope.

PP-124 - Peritoneal Dialysis

Diagnosis of Peritoneopleural Dialysis Leak in Children on Peritoneal Dialysis Using Radionuclide Technique

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Introduction: Hydrothorax secondary to pleuroperitoneal communication is an unusual complication and occurs in approximately 2% of peritoneal dialysis patients. Many procedures have been used to diagnosis this: chest X-ray, pleural fluid analysis, computed tomography scan, magnetic resonance image and Tc-99m scintigraphy.

Objective: We present a 12-year-old boy who was on PD for 4 years. He was admitted with hypertension encephalopathy, generalized edemas, and history of shortness of breath on exertion and dry cough increasing in supine position. Chest examination was suggestive of right sided pleural effusion confirmed by chest X-ray. The hydrothorax compromises the patient's ventilatory function and thoracocentesis was used.

Method: Peritoneal scintigraphy was done after intraperitoneal administration of Tc-99m sulfur colloid through the peritoneal catheter together with the dialysate solution. Images were acquired immediately, 3 and 24 hours after radiotracer administration.

Findings: In 24 hours images we observed the presence of the radiotracer in the right basal hemitorax, in the projection of right lung field. The peritoneal dialysis (PD) was discontinued and the patient was switched to hemodialysis.

Conclusion: We conclude that the peritoneal scintigraphy is effective and non invasive method in demonstrating pleuroperitoneal leak in patients with end stage renal disease on peritoneal dialysis.

PP-125 - Peritoneal Dialysis

Is There Any Relationship between Homocysteine and Osteoporosis in Patients Undergoing Peritoneal Dialysis Therapy

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Aim: To evaluate the relationship between homocysteine (Hcy) and OP among patients undergoing Continuous Ambulatory Peritoneal Dialysis (CAPD).

Materials-Methods: Sixtytwo CAPD patients were enrolled to the study. Age, body mass index, Hcy, calcitonin, parathormone, CRP, biochemical, and hematological parameters of patients were recorded. Femur neck (FN), and spine (S) BMC and BMD were measured by dual X-ray energy absorptiometry (DEXA). Patients were divided into 2 groups according to gender; group1; male, group2; female, and compared.

Results: Thirtyfour of patients were female, and 28 were male. Demographic, biochemical hematological parameters groups were shown in table1. There was statistically significant difference between groups in FN-BMC, BMD, and S-BMC (p<0, 001, p=0, 003, p<0, 001, respectively). According to FN T-score 8 of females, and 6 of men, according to S T-score 3 of females, and 1 of men were osteoporotic (p=0, 731 and p=0, 453 respectively). In contrary to expectations there were positive correlation between Hcy and FN-BMD (r=0, 273, p=0, 032), and no correlation between Hcy, and S-BMD (r=0, 169, r=0, 189).

Conclusion: Although Hcy levels were higher in CAPD patients, we did not find any negative correlation between Hcy and BMD, thus although being a limited study, we suggest that among CAPD patients HHcy may not contribute to osteoporosis.

Table 1: Demographic, biochemical hematological parameters of groups

Parameters	Group 1 (n=28)	Group 2 (n=34)	p
Age	39,7±13,6	39,7±12,8	0,995
CAPD duration	45,5±34,3	44,9±30,8	0,946
BMI	23,2±3,6	23,2±4,9	0,985
Hcy	19,6±13,7	17,5±9,08	0,476
Osteocalcin	43,0±35,9	50,7±33,7	0,385
Ca	8,8±0,9	11,7±4,7	0,317
P	5,4±1,8	5,6±1,7	0,679
PTH	498,7±442,3	450,4±407,0	0,675
Hemoglobin	12,4±5,6	10,7± 3,6	0,280
C-Reactive protein	6,9±5,8	6,7±12,5	0,152

PP-126 - Hemodialysis, Apheresis, Artificial Organs

Dialysis Headache in Hemodialysis and Peritoneal Dialysis Patients

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Aim: Evaluation of the incidence and features of dialysis headache (DH).

Material-Methods: Study included 409 patients - 318 on regular hemodialysis (HD) and 91 on peritoneal dialysis (PD). Patients were questioned using a questionnaire designed according to the diagnostic criteria of the International Headache Classification of Headache Disorders from 2004. Patients on HD and PD were compared regarding sex, age, primary renal disease, arterial blood pressure and serum levels of hemoglobin, urea nitrogen, creatinine, sodium, potassium, calcium, phosphates, albumin, glucose and calcium-phosphates product.

Results: Twenty-one HD patient (6.6%) and none of the PD patients complained about DH. Patients undergoing PD had significantly lower sodium, potassium, calcium, phosphate, urea and creatinine, calcium-phosphate product, and diastolic blood pressure, while patients on HD had significantly lower hemoglobin compared to PD patients. Primary renal disease was mostly parenchymal in HD patients, and vascular in PD patients. Dialysis headache features: it appeared more frequently in men, during the third hour of HD, lasted less than four hours, was bilateral, non-pulsating and without associated symptoms.

Conclusion: Results point out biochemical changes possibly implicated in pathophysiology of DH and disclose specific features of DH that might contribute to better understanding of this secondary headache disorder.

PP-127 - Peritoneal Dialysis

Noninfectious Complications of Peritoneal Dialysis and Their Impact on Technique Failure

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The purpose of this study was to determine the incidence of noninfectious complications in our PD patients and to investigate the potential risk factors. We studied 59 unselected patients treated with PD during the past 5 years. There were 27 females pts mean age 49.92±15.27 and 32 males mean age 51.86 ± 14.53 years with median time on PD 19 months.

A total of 31 noninfectious complications were registered in 32% of the patients. 5 cases with inflow obstructions; 3 cases with outflow obstructions; 3 pts had hemoperitoneum; 8 pts had hernia and 7 pts had leaks. Hernia was most frequently located in the umbilical region in females (3 pts), in inguinal region in males (4 pts) and the most frequent site of leakage was the pericatheter area in 5 pts. Surgically repair was necessary in 3 cases. Polycystic kidney disease was the only factor associated with higher rate of hernia 3 pts in 5 pts with polycystic kidney disease, and increase age (p=0.04) was significantly associated with the appearance of leaks. Noninfectious complications were responsible for 20% of all causes of technique failure.

Catheter obstruction is an important cause of technique failure, although this is not associated with patients mortality.

PP-128 - Peritoneal Dialysis

Comparison of Nutritional Status of Patients on Hemodialyses and Peritoneal Dialysis

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Introduction: The aim of the study was comparison of nutritional status in PD and HD.

Methods: We compared data of 30 CAPD patients 14 F, mean age (50.28±17.03) 16 M mean age (40.5±15.42) mean PD time 19 months with data of 32 HD patients 15 F mean age (43.71±10.44) 17 M mean age (40.56±18.32) mean HD time 46 months.

Results: BMI <20Kg/m² in 33.3% of HD and 16.6% of PD patients; Serum albumin <4g/dl in 66.7% of HD and 70% of PD patients; The cholesterol level 151.30±43.67mg/dl in HD and 168.16±46.59 in PD patients p=0.05;

Triglyceride level 132.56±66.79 mg/dl in HD and 158±73.33 in PD patients p=0.056;

Cholesterol <150mg/dl in 40% of HD and 26.6% of PD patients; Protein Catabolic Rate <1g/kgBW/day in 20% of HD and 26.6% of PD patients; SGA score 5-7 in 43.3% of HD and 70% of PD patients, score 5 in 50% of HD and 27% of PD patients, SGA score 3 in 6.7% of HD and 3% of PD patients. 13% HD patients and 6.6% PD patients had moderate to severe malnutrition (>=3 criteria concomitantly).

Conclusion: The Nutritional status was significantly better in PD patients than HD patients.

PP-129 - Clinical Nephrology

The Evaluation of the Effects of the Dual and Triple Combinations of Trandolapril, Telmisartan and Verapamil on Apparent Proteinuria in Patients with Diabetic Nephropathy

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Background: Diabetic nephropathy (DN) is the leading cause of end-stage renal failure. Proteinuria is an established risk marker for progressive renal function loss. This study evaluated the effect of the dual and triple combinations of ACE inhibitor, the non-dihydropyridine calcium antagonist (NDCAs), and ARB on proteinuria in patients with DN.

Methods: A total of 78 patients (mean age 56, 11±11, 26 years, 47 female, 31 male) who had not used ARBs, ACEIs and NDCAs previously were enrolled in the study. They were randomized to 4 groups, receiving telmisartan 80 mg/day plus trandolapril 2 mg/day in group 1, trandolapril 2 mg/day plus verapamil 120 mg/day in group 2, telmisartan 80 mg/day plus trandolapril 2 mg/day plus verapamil 120 mg/day in group 3, and verapamil 120 mg/day plus telmisartan 80 mg/day in group 4 for 12 weeks. The primary endpoint was the difference in the urinary albumin to creatinine ratio between the groups at 12 weeks.

Results: Table 1 shows the effects of dual and triple combination therapies.

Conclusions: The combination therapies, significantly decrease proteinuria in patients with DN. There is no difference between groups in decreasing proteinuria. Triple combination therapy has no superiority over dual combination therapies.

The effects of dual and triple combinations of ACEIs, ARBs and NDCAs on parameters in type 2 DM patients

		Group 1	Group 2	Group 3	Group 4
Proteinuria (g/day)	BT*	3,27±4,50	2,52±2,55	2,98±2,79	3,88±3,99
Proteinuria (g/day)	AT**	1,98±2,80	1,58±1,71	1,71±1,79	2,20±2,24
Proteinuria (g/day)	p	<0,001	<0,001	<0,001	<0,001
MABP (mmHg)	BT	118,11±8,50	113,79±11,36	128,46±9,00	116,79±14,15
MABP (mmHg)	AT	99,40±9,65	98,12±8,04	105,96±8,76	98,79±7,81
MABP (mmHg)	p	<0,001	<0,001	<0,001	<0,001
GFR (ml/min)	BT	59,15±30,70	63,25±30,24	54,17±27,64	56,57±29,22
GFR (ml/min)	AT	57,60±28,60	58,71±27,38	52,46±24,61	55,29±28,51
GFR (ml/min)	p	0,586	0,240	0,866	0,881
HbA1C (%)	BT	8,97±2,60	9,29±3,07	9,45±2,59	10,16±2,24
HbA1C (%)	AT	8,07±1,80	8,47±2,28	8,43±2,29	8,55±1,61
HbA1C (%)	p	0,102	0,135	0,013	0,001
Albumin (g/dL)	BT	3,90±0,61	3,67±0,58	4,01±0,49	3,46±0,70
Albumin (g/dL)	AT	3,92±0,57	3,65±0,52	4,15±0,44	3,60±0,69
Albumin (g/dL)	p	0,403	0,779	0,102	0,200
Potassium (mEq/L)	BT	4,57±0,50	4,60±0,45	4,58±0,44	4,62±0,45
Potassium (mEq/L)	AT	4,61±0,48	4,58±0,46	4,49±0,53	4,70±0,45
Potassium (mEq/L)	p	0,690	0,793	0,342	0,154
LDL Chol (mg/dL)	BT	136,61±50,57	137,00±26,72	155,15±33,04	140,70±42,48
LDL Chol (mg/dL)	AT	124,52±51,12	143,25±38,99	147,40±44,50	146,30±47,20
LDL Chol (mg/dL)	p	0,879	0,466	0,263	0,550

* Before Treatment, ** After treatment

PP-130 - Clinical Nephrology

Use Program “Medical Calculator of Albuminuria/Proteinuria” for Calculating Proteinuria in Patients with Diabetic Nephropathy

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Objective: To create computer program for calculating protein-creatinine ratio (PCR), determine PCR accuracy in patients with diabetic nephropathy (DN). **Methods:** 22 patients with DN (the 4th stage in 7 persons, the 5th stage in 15) were researched: age - 44, 9+14, 3 years, 24-hour proteinuria Median - 2, 03 (25%'s-75%'s - 0, 8-3, 48), PCR Median - 1, 4 (25%'s-75%'s - 0, 63-2, 62). The correlation analysis was spent by Spearman Rank Correlations (R). Sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) were researched. PCR was calculated by program “Medical calculator of albuminuria/proteinuria”.

Results: For computer program creation we derivated 22 formulas of calculation protein (albumin)-creatinine ratio, protein (albumin)-osmolality ratio, considering possible units of measure of the parameters both entrance and resultant data and their conversion from one system of measurement into appropriate. «Help» includes normal values of some urine parameters, albuminuria/proteinuria classifications. There is a choice of select language (Kazakh, Russian, English). PCR was significantly correlated with 24-hour urine protein excretion (R=0, 7, p=0, 0004). PCR has sensitivity of 63%, specificity-33%, PPV of 86%, NPV of 88%.

Conclusion: Quantification proteinuria by this method, using detection of substances concentration in spot urine specimen, will allow avoiding 24-hour urine collection, decrease time and material loss.

PP-131 - Clinical Nephrology

Reducing Diabetic CKD Stage 1 Proteinuria Using Ramipril Decreases Circulating Cell Death Receptor Activators Concurrently with ADMA: Relationship with Endothelial Dysfunction

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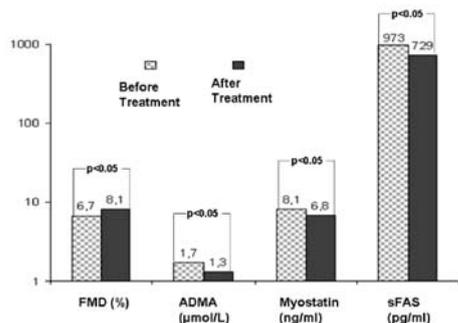
While proteinuria is an accepted risk factor for cardiovascular disease (CVD) and mortality in patients with diabetic nephropathy, the mechanisms mediating these detrimental effects remain unclear. Meanwhile, reduction of proteinuria using renin-angiotensin system (RAS) blockade is an established method of reducing CVD risk. We hypothesized that RAS therapy may reduce ADMA by reducing cell death.

We assessed circulating levels of apoptotic signaling peptides in incident CKD stage 1 diabetic patients not previously prescribed statins or RAS blockade. In an open-label trial, patients were given an ACE inhibitor (ramipril, 5 mg once per day) for 12 weeks immediately following baseline measurements, and ADMA, soluble FAS (sFAS), myostatin and endothelial function (FMD) were studied before and after the intervention period.

ADMA, sFAS, myostatin, insulin resistance, hsCRP, eGFR, blood pressure, HbA1c, and proteinuria levels all significantly decreased following 12 weeks of ramipril therapy in CKD stage 1 patients (p<0. 05 for all). ADMA and sFAS levels were both independently related to FMD levels both before and after ACEI treatment.

A reduction of proteinuria in CKD stage 1 diabetic kidney disease is accompanied by lower circulating sFAS, myostatin and ADMA, suggesting that increased cell death may contribute to ADMA formation and endothelial dysfunction in CKD.

Figure 1



PP-132 - Clinical Nephrology

Antialbuminuric Effect of Pentoxifylline Combined with Angiotensin II Receptor Blockers in Type 2 Diabetic Patients

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The tight glyemic control, the use of antihypertensive drugs and the blockade of renin-angiotensin system do not halt completely the albuminuria in type 2 diabetic patients. We tried to investigate the additive antiproteinuric effect of pentoxifylline combined with angiotensin II receptor blockers (ARB) in type 2 diabetic patients with albuminuria.

Sixty four patients were assigned in two groups: group A (34 pts; mean age 56.8+/-12.8 years) received valsartan 160 mg/d and group B (30 pts; mean age 57, 1+/-12.6 years) received valsartan 160 mg/d plus pentoxifylline 800 mg/d for a period of six months.

Albuminuria levels decreased from 542 +/- 48mg/d to 284 +/- 32 mg/d. in group A at the end of the study (p<0.05). In group B albuminuria decreased from 582 +/- 36mg/d to 191 +/- 24 mg/d (p<0.05)

The reduction of albuminuria in patients treated by combination of valsartan + pentoxifylline was more significant than that observed in patients treated with valsartan only (p<0.05). This additive antiproteinuric effect was not dependent on changes in blood pressure or metabolic control.

The combination of pentoxifylline with an ARB in albuminuric type 2 diabetic patients has better antiproteinuric effect than ARB alone.

PP-133 - Clinical Nephrology

Male Pseudohermaphroditism as a Cause of Secondary Hypertension: A Case Report

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Introduction: Seventeen alpha-hydroxylase deficiency (17OHD) syndrome is a rare genetic disorder of steroid biosynthesis causing decreased production of glucocorticoids and sex steroids and increased synthesis of mineralocorticoid precursors. There are only 130 cases reported worldwide, with documented severe 17OHD. Here, we describe the clinical, hormonal and molecular genetic characteristics of a Turkish patient with 17OHD, who presented to our clinic due to high blood pressure.

Case: We report severe 17OHD in a 29 year-old girl with 46, XY genotype. The diagnosis was suspected because of primary amenorrhoea, absence of sexual maturation and hypertension. Endocrine investigation revealed low basal levels of all steroid hormones which require 17-hydroxylation for biosynthesis. Plasma concentrations of ACTH, FSH and LH were elevated. Pelvic ultrasonography and MRI didn't reveal uterus or adnexial structures. The patient's hypertension and hypokalemia resolved after glucocorticoid replacement and treatment with potassium-sparing diuretics.

Discussion: 17OHD is a rare form of congenital adrenal hyperplasia in which defects in the biosynthesis of cortisol and sex steroid result in mineralocorticoid excess, hypokalemic hypertension and sexual abnormalities such as pseudohermaphroditism in males, and sexual infantilism in females. 17OHD should be suspected in patients with hypokalemic hypertension and lack of secondary sexual development.

PP-134 - Clinical Nephrology**The Correlation of Hypertension and Renal Structure in Autosomal Dominant Polycystic Kidney Disease**

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Renal structure (kidney size and cystic renal volumes) has been shown to play an important role on the pathogenesis of hypertension in autosomal dominant polycystic kidney disease (ADPKD) and on the renal function. We have evaluated the role of renal cystic enlargement on hypertension in ADPKD. 200 ADPKD patients (pts) were divided in two groups: first group of 92 pts with normal renal function, and second group of 108 pts with chronic renal failure (serum creatinine level >1.5 mg/dl). Variables are presented as mean±SD. P<0.05 was considered significant.

Hypertension was observed in 140 ADPKD patients (70%). The kidney size (longitudinal diameter) was significantly greater in the hypertensive patients compared with normotensive pts (16.36±1.9 cm vs. 12.9±1.06 cm, p<0.039). Systolic and diastolic blood pressure correlated with kidney size (r=0.55; r=0.63). Also, mean renal volume was significantly greater in the hypertensive patients versus the normotensive pts (590±43 cm³ vs. 365±45 cm³, p<0.005).

In the present study, hypertension was associated with greater renal structural abnormalities. Specifically, the hypertensive ADPKD pts have greater renal volumes and cystic involvement than well-matched normotensive ADPKD pts. This supports the hypothesis that cyst decompression has been associated with a decrease in blood pressure and an improvement of renal function.

PP-135 - Clinical Nephrology**Chronic Periodontal Infection and Diabetic Microalbuminuria: Coincidence or Association?**

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Introduction: This study was designed to demonstrate this hypothesis and contribution of local infections to microalbuminuria was reviewed.

Material-Method: The study group comprised of 156 type 2 diabetic patients that applied to for any reason. Based on screening, patients were assigned to a microalbuminuria group (Group1, n=54) or a normoalbuminuria group (Group2, n=38). 32 healthy non-diabetic patients that have similar age, sex, body mass index and lipid profile were enrolled as control (Group3). Chronic periodontitis frequency of all groups were determined and comparisons of diabetic patients (Group1 and 2) within groups were made. Patients with chronic periodontal infection and without this infection compared in aspects of urinary albumin excretion, duration of diabetes, chronic vascular complications of diabetes, blood pressure, diabetes regulation and treatment approaches.

Results: In diabetic patients (all of group1 and 2 patients), chronic periodontitis frequency was found higher than control group (63,7% and 27,8% respectively, p<0, 05), and diabetics with microalbuminuria (Group 1) have significantly higher periodontitis frequency than diabetics with normoalbuminuria (Group 2) (69,1% and 58,4% respectively, p<0,05). In diabetics with chronic periodontitis (Group 1 and 2) urinary albumin excretion was higher than the patients without this infection (107,4±96,8 mg/day and 67,3±54,4 mg/day respectively, p<0, 05).

Conclusion: Therefore we concluded that maintenance of dental health and hygiene and treatment of chronic periodontitis are the necessities for the diabetic patients.

PP-136 - Clinical Nephrology**The Relationship between Insulin Resistance and Renal Function among Autosomal Dominant Polycystic Kidney Disease Patients**

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Insulin resistance (HOMA) has been reported in ADPKD. We analyzed the association between renal function and HOMA in ADPKD patients while documenting antropo-plicometric (AP) measurements.

Serum creatinine, glucose, HbA1c, insulin and glomerular filtration rate (GFR) were measured in 64 (36 female, 28 male, mean age: 47.3±15.53 years) patients; categorized according to their GFR as Group 1 (>90 ml/min), Group 2 (60-89 ml/min), Group 3 (30-59 ml/min) and Group4 (15-29 ml/min). HOMA was calculated; height, weight and AP measurements (Table) were performed. BMI, waist/hip ratio, total body fat were calculated. Data was analysed with SPSS for Windows 11.5.

GFR of Group 1 (9 female, 13 male, mean age: 33.9 years) was 118, 43±19, 97 ml/min. It was 78, 50±8, 24 ml/min in Group 2 (3 female, 12 male, mean age: 47.1 years) and 40, 86±8, 23 ml/min in Group 3 (10 female, 5 male, mean age: 55.2 years) and 20, 13±5, 06 ml/min in Group 4 (6 female, 6 male, mean age: 62.4 years). Mean BMIs were 27.45±5.14 kg/m²; 28.56±6.15kg/m²; 27.13±3.86 kg/m² and 25.7±4.12 kg/m², respectively. 37.5% were overweight and 23.4% obese. HOMA was 2, 26±1, 33 in Group 1; 3, 68±4, 58 in Group 2; 2, 83±1, 81 in Group 3 and 2, 77±1, 07 in Group 4. The correlation between HOMA and waist measurement was more significant than HOMA and waist / hip ratio correlation. There were correlations between HOMA and skinfoldthickness and total body fat.

There was not any increase in HOMA with a decrease in kidney function and obesity was an additional risk factor. In conclusion, there is a relation between HOMA and ADPKD, which is independent of renal function.

Table1

	Group1	Group2	Group3	Group4
Waist Circumference, cm	91±12	97,9±15,9	97,2±11,2	95,2±13,6
Hip Circumference, cm	112,1±8,4	111,5±8,1	110,3±6,5	105,7±5,91
Midarm Circumference, cm	28,9±3,4	27,8±3,6	27,9±3,1	26,3±3,3
Triceps SFT, mm	14,4±7,7	14,1±4,4	10,6±4,9	11,6±5,4
Biceps SFT, mm	9,9±5,9	7,9±2,2	7,9±3,8	6,5±2,3
Suprailiac SFT, mm	21,3±8,0	21,8±7,8	18,7±10,3	15,3±8,4

PP-137 - Clinical Nephrology**Bacteriological Findings of Urinary Tract Infections in Autosomal Dominant Polycystic Kidney Disease**

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Urinary tract infections (UTI) are important renal manifestations of autosomal dominant polycystic kidney disease (ADPKD), influencing on renal dysfunction. The aim of this study was to evaluate the frequency of UTI in ADPKD and their impact on renal function.

180 ADPKD patients were studied during last 5 years. Subjects were considered as having UTI if they had had two or more episodes of UTI. The antibiotic therapy for the treatment has been adapted according to the bacteriological findings.

UTI were observed in 60% of our ADPKD patients (108 patients), and were more frequent in women than in men (F: M ratio 2.1/1.5). The infections were typically caused by gram negative enteric organisms. Blood culture was positive in 10%, while urine culture was negative in 40%. The episodes of isolated cyst infections (negative urine culture and absence of white blood cell casts in urinary sediment) were more frequent than those of acute or chronic pyelonephritis (urinary sediment was positive for white blood cell casts).

We conclude that UTI are frequent in our ADPKD patients. Distinguishing between cyst infection and acute or chronic pyelonephritis is often a challenge, and the diagnosis relies mainly on clinical and bacteriological findings.

PP-138 - Clinical Nephrology

Renal Injury due to Hepatic Hydatid Disease

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In the present study, we aimed to put forward the frequency and the peculiarity of the renal involvement due to hydatid disease. Eighty patients older than 18 years and diagnosed as liver echinococcosis were included to the study. The diagnose of echinococcosis was established by the indirect hemagglutination test and abdominal ultrasonography. In patients who had elevated serum creatinine level or whose urinalysis were positive for hematuria or proteinuria, 24 hours protein excretion was measured, thereafter renal biopsy was applied and specimens were examined with the light microscopy and immunofluorescent staining. Hematuria was detected at 11 patients (13.75 %) and proteinuria was detected at 9 patients (11.25 %). Nine patients approved percutaneous renal biopsy and it was applied to all of them. We detected 4 immunoglobulin A nephritis (together with tubulointerstitial nephritis in one patient), 1 membranoproliferative glomerulonephritis, 1 immunoglobulin M nephritis together with mesangiocapillary glomerulonephritis, 1 membranous glomerulonephritis, 1 amyloidosis and 1 tubulointerstitial nephritis. Renal hydatid cyst was detected only in 4 patients (5 %). Hydatid disease which effects the kidney is not rare and we suggest that the urinalysis and, if indicated, renal biopsy should be done for hepatic hydatid disease.

PP-139 - Clinical Nephrology

Acute Renal Injury after Myeloablative Hematopoietic Stem Cell Transplantation (HSCT): Incidence, Risk Factors and Association with the Quantity of Transplanted Cells

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Aim: We aimed to investigate the prevalence and risk factors of acute kidney injury (AKI).
Methods: The study was included 39 patients (mean age 30.97 ± 12.33 years and 24 male/15 female) with allogeneic HSCT. Creatinine clearance was determined from 24 hour collected urine samples. AKI were divided into 3 categories (Table 1).
Results: AKI developed in 20 (51.3%) of 39 patients. Of 20 patients with AKI, 11 (55.0%) and 9 (45.0%) had stage I and stage II AKI, respectively. Basal hemoglobin level was higher in AKI group compared to control group (12.21 ± 2.58 vs. 9.85 ± 2.58, p: 0.007). There was no significant difference between two groups in term of age, gender, engraftment period, development time of AKI, use of amphotericin-B and vancomycin, amount of proteinuria, serum albumin level, CD+ 34 cell count, and duration of AKI. When patients with AKI were evaluated for clinical response after allogeneic HSCT, all patients with stage 2 were in remission however five of nine patients with stage 1 were in remission.
Conclusion: AKI was common complication after allogeneic HSCT. Amounts of CD+ 34 cell counts did not affect AKI. Stage of AKI did not associate clinical response after allogeneic HSCT.

Classification of acute renal injury

PP-139

Stage	
1	Increased creatinine x 2 or creatinine clearance decreases > 50%
2	Increased creatinine x 3 or creatinine clearance decreases > 75% or serum creatinine > 4 mg/dL
3	Requiring dialysis

PP-140 - Clinical Nephrology

Diabetes and Nephropathy: Overview of Three Cases

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Introduction: Diabetes mellitus (DM) is a growing society problem. Diabetic nephropathy is the most important complications of DM. Also it is one of the most common reasons of CKF (Chronic kidney failure).
Case 1: 52 years old male with diabetes mellitus (DM) for 15 years, presented pretibial edema. On investigations, his serum creatinine was 1.05 mg/dL, his urine protein was 1, 8 gr/day and serum albumin was 3, 2 g/L. Vasculitis markers were negative. There were no evidence of diabetic rethnipothy. Renal biopsy showed us, FSGS in this patient.
Case 2: 59 years old male with DM for 4 years came to us with edema at his and legs. Blood urea:73 mg/dl cre:2.2 mg/dl alb: 1.08, and spot urine protein/, creatinin:15.3. Otoimmun markers were negatif. Diabetic rethnopathy wasn't determined. Diabetic nephropathy existed at renal biopsy.
Case 3: 45 years old patient with DM for 15 months came to us with edema at his feet. His blood urea was 34 mg/dl, cre:1 mg/dl and albumin:15 g/l and spot urine/protein kreatinin: 2.44. Otoimmun markers were negatif. Diabetic rethnopathy wasn't determined. FSGS existed at renal biopsy.
Discussion: DN is the one of the complications that generally found in the diabetic patients. Although DN has a huge role in the progression of DM outhr glomeruler disease can damage renal parancim in patient with DM. If the patient with DM (who has no diabetic rethnophay) has a fast decrease of GFR and increase of urine protein excretion must investigate for other reasons of kidney illness that can damage glomerules.

PP-141 - Clinical Nephrology

Prediction of Glomerular Filtration Rate Irreversible Decrease in Patients with Diabetes Mellitus Type 2

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Objective: To develop statistical model for prognosis of glomerular filtration rate (GFR) irreversible decrease (GFRID) in patients with diabetes mellitus type 2 (DM2).
Methods: 30 patients with DM2 were researched: age - 57,5+8,7 years, male: female - 21:9. GFR was calculated by MDRD formula - 91,36+28,6 ml/min/1,73m². The presence of reversible (> 60 ml/min) and irreversible (<60 ml/min) changes of GFR level was used as dependent attribute. Glycosylated hemoglobin (HbA1c) - 9,25+2, 12% and cholesterol (Ch) - 5,49+1,2 mmol/L were chosen as independent attributes by the results of single factor logistic analysis (p=0,02). We used multiple logistic regression analysis for evaluation prognosis of the development of GFRID under the influence of these factors.
Results: The coefficients β₀=2; β₁=1 for HbA1c and β₂=0, 78 for Ch were calculated. There was received the equation, allowing quantitatively estimate risk of GFRID: y =exp (2+ (-1)*x+(0,78)*x1)/1+exp (2+ (-1)*x+(0,78)*x1), p=0,05; where y - probability of development of GFRID, x - HbA1c value, x1 - Ch value. Thus, individual risk degree of development of GFRID can be calculated in absence of changes in kidney function.
Conclusion: So, early assignment of nephroprotective therapy and stricter diabetes control will enable to prevent the diabetic nephropathy progressing at calculated high increased risk.

PP-142 - Clinical Nephrology

Renal Oncocytoma in a Patient with Non-Hodgkin Lymphoma in Remission

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Introduction: Renal oncocytoma is a relatively rare neoplasm of the kidney. A few reports exist in the literature describing of renal oncocytoma in a patient previously diagnosed with Non-Hodgkin Lymphoma (NHL). In the present report a patient with renal oncocytoma who was earlier diagnosed with NHL will be presented.

Case: 36 years old female patient applied to our clinic with side pain and dysuria for 2 days. She was diagnosed with NHL 15 years ago, treated with 8 cure chemotherapy and remained in remission for 10 years. Physical examination were normal. Both renal ultrasonography and abdominal tomography demonstrated a 2.5x3 cm diameter solid mass at the right kidney. Pathological examination after renal tru-cut biopsy revealed oncocytoma. As a treatment, conservative approach applied and surgical intervention wasn't planned due to both renal functions and size of the tumor remained stable.

Discussion: Renal oncocytoma in its usual solitary form is a benign neoplasm of the kidney. A few cases of local invasion and metastases have been reported in the literature. The patients with renal oncocytoma can apply with nonspecific complains. These patients should be monitored closely and conservative therapy should be applied unless oncocytoma becomes symptomatic, large or grows quickly.

PP-143 - Clinical Nephrology

Does Retinitis Pigmentosa Relate with Polycystic Kidney Disease?

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Autosomal dominant polycystic kidney disease (ADPKD) is one of the most common genetic disorders. Many hereditary renal diseases have been described in association with retinitis pigmentosa but combination of ADPKD and retinitis pigmentosa reported only one case in literature. We herein report the first case that was presented ophthalmic symptoms before diagnose of ADPKD. A 21 year old female presented with temporary visual loss and gross hematuria. In ophthalmological examination, funduscopy showed retinitis pigmentosa (Figure 1), which was confirmed by electroretinogram. Serum creatinine concentration was 1.6 mg/dL and renal ultrasonography revealed bilateral polycystic kidneys, which had been unknown previously by this patient. Abdominal computerized tomography showed bilateral increased kidney size with multiple cysts. Family history revealed that her uncle had polycystic kidney disease without end stage renal disease.

In the human kidney, ADPKD is caused by mutations in PKD1 (polycystin 1), or PKD2 (polycystin 2). Inherited mutations in genes encoding for ciliary proteins lead to a broad spectrum of human diseases, such as polycystic kidney disease, hydrocephalus, retinitis pigmentosa, situs inversus and obesity. In the present patient, there was probably inherited defect of cilia, thus the combination ADPKD and retinitis pigmentosa was seen together.

Figure 1



The arrow shows lesions consistent with retinitis pigmentosa in fundoscopic evaluation.

PP-144 - Clinical Nephrology

The Prevalence of Cardiovascular Risk Factors in Patients with Uric Renal Stones

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Introduction: The aim of the study was to evaluate the prevalence of hypertension in patients with uric acid stones and compare it with the hypertensive population without renal stones. We also aim to study the correlations between renal stone disease with age, lipid abnormalities and obesity.

Material and patients: In this study were examined 35 patients. Patients with uric acid stones were 20 versus 15 patients with no stones.

Results: The prevalence of hypertension was similar in two groups. The patients, presenting renal stones, presented also a higher level of mean systolic, 151±14 mmHg versus 147±9 mmHg, (p<0,05) and diastolic blood pressure, 102±0,8 mmHg versus 100±0,2mmHg (p<0,05), compared with patients without stone. Patients presenting renal stones were older 45 ±13 versus 38, ± 5 years (p<0,001), presented higher obesity, BMI 27± 0,4 versus 24, 7 ±0,6 (p>0,01), had higher levels of total cholesterol 217± 5mg/dl versus 201±4 (p<0,02) and triglycerides 158±9mg/dl versus 124±5mg/dl (p<0,03), compared with no stone population.

Conclusions: Uric stone formers population presented higher levels of blood pressure, were older and the blood levels of cholesterol and triglycerides were higher compared with no stone population

PP-145 - Clinical Nephrology

Relationship Between Diabetic Nephropathy and Carotid Intima – Media Thickness

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Introduction: The aim of the study was to assess relationship between diabetic nephropathy and structural changes in arteries, such as carotid intima –media thickness (IMT).

Materials-Methods: We selected 80 adults with type 2 diabetes. They were divided into three groups based on albuminuria status: Group I = no albuminuria, numbers of patients 27; Group II = microalbuminuria, numbers of patients 26; and Group III = macroalbuminuria, numbers of patients 27. Each group was evaluated for body mass index (BMI), glycosylated hemoglobin (HbA1C), lipid profile, blood pressure.

Results: Systolic blood pressure in the II-group was 143.3±15. 2mmHg and significantly higher (p<0.01) than in the I-group (132.5 ±18.1mmHg) and III-group (139.8±18.9mmHg). No significant differences in age, smoking and kind of antihypertensive agent used were found between three groups. IMT level in the II-group was 1. 28±0.35mm and significantly higher than in the I and III group (1.09±0.28mm; 1.19±0.44mm, respectively). There were no significant differences in HbA1C, lipid or serum creatinine between three groups.

Conclusion: The carotid IMT was significantly higher in the patients with microalbuminuria and so, the last one is associated with structural changes in arteries.

PP-146 - Clinical Nephrology

Systemic Amyloidosis Associated with Synovial Sarcoma

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Introduction: Chronic inflammatory diseases and AA amyloidosis have been well established; the evidence linking solid malignancies to reactive AA amyloidosis is uncommon. We describe a case of a 57-year-old man diagnosed with AA amyloidosis associating synovial sarcoma.

Case: A 57-year-old man was admitted to the hospital with lower extremity edema and uremia. He had no history of any systemic disease. Physical examination was normal except 2 + pitting edema in the lower extremities. Admission laboratory data were as follows: serum creatinine, 7.69 mg/dL, serum albumin 18 g/L, a 24-hour urine collection showed protein excretion of 21.8 g, ANA and anti-dsDNA antibodies tested negative, and the complement levels were normal. Abdominal ultrasound showed kidneys of normal size and incidentally 8x7 cm mass in mesenteric fatty tissue posterior of transverse colon was detected. A rectal biopsy specimen showed amyloidosis immunohistochemical stain with antibody against human amyloid AA fibrils was positive. Histopathologically the mass was classified as synovial sarcoma.

Discussion: AA amyloidosis associating solid tumors are scarce, and reports associating mesenchymal neoplasm to amyloidosis are even harder to find. Stromal tumors, although rare, may be associated with and should be considered in the differential diagnosis of the cause of AA amyloidosis.

PP-147 - Clinical Nephrology

The Blind's Identification of Elephant: A Case Study with Takayasu Arteritis

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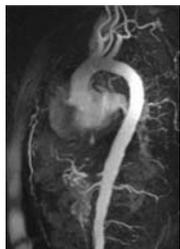
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Introduction: Takayasu arteritis is a chronic, inflammatory, occlusive disease of the aorta and its major branches. According to the affected vessel and level of lesion, clinical findings of this disease may change.

Case: A 39-year-old man, admitted to chest surgery clinic with the cause of mediastinal lenfadenopathy, was referred to nephrology clinic due to high creatinemia. Four years ago, the patient had a stroke and fully recovered. He had undergone stenting because of right renal artery stenosis. The left renal artery was occluded completely. When he applied for our clinic, he had headache, fatigue, weakness. Physical examination indicated that his both bilateral radial and brachial artery pulses were not palpable and blood pressure couldn't be calculated. Muscle power of right side was estimated as 4/5. Laboratory values revealed erythrocyte sedimentation rate (72 mm/h) and C-reactive protein (75 mg/l). Plasma concentrations of creatinine and urea were raised (2,09 and 64 mg/dl, respectively). The image showed that proximal celiac trunk, left renal artery, proximal right subclavian artery are completely occluded. Thanks to these findings, we made takayasu arteritis diagnosis so that metil prednizolon, aziotopurin could be given. The level of creatinin decreased to 1.6 mg/dl at the end of the first month of treatment.

Conclusion: The patient is still being monitored and his history and psysical examination should be carried out meticulously. The doctor has to attach essential importance to his complaints and he/she has to take into consideration each estimation thoroughly.

Figure 1: MR angiography show the complete occlusions of proximal celiac trunk and proximal right subclavian artery.



PP-148 - Clinical Nephrology

Correlation between Left Ventricular Hypertrophy and Body Mass Index in Patients with Diabetes Mellitus Type 2

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Introduction: The objective of the present study was to investigate association between waist circumference-body mass index (BMI) and left ventricle mass (LVM)-left ventricle mass index (LVMI) in patients with type 2 DM and without known cardiac disease.

Methods: The study group comprised of 65 patients with type 2 diabetes, hospitalized at the Department of Internal Medicine. Diabetes was defined by fasting plasma glucose levels 126 mg/dl or by specific treatment. BMI was calculated by standard formula and expressed as kg/m² and abdominal circumference was measured, too. LVMI was >134 g/m² in men and >110 g/m² in women.

Results: In all patients, there were significant correlation between abdominal circumference and LVM; between BMI and LVM; between BMI and LVMI. According to sex, were significant relations between BMI and LVM (p: 0,03), BMI and LVMI (p: 0.007), only in woman. These parameters were not associated in men.

Conclusion: In diabetic patients, high BMI and abdominal circumference were associated with increasing LVM and LVMI, especially in women. So, in obese diabetics these parameters are important risk factors, for heart disease.

PP-149 - Clinical Nephrology

A Rare Cause of Rhabdomyolysis: Chlorophenoxy Compounds

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Aim: To present a case of chlorophenoxy intoxication with rhabdomyolysis.

Case: A nineteen years old female unconsciousness patient was admitted to the emergency room, an intravenous line was inserted and 1000 cc 0.9 % saline infusion was begun, gastric lavage was carried out and activated charcoal was administered via gastric tube. In the physical examination; Glasgow coma scale was 9, BP:90/50 mmHg, temperature: 36.8°C, breathing: 14 /min, a small size ecchymotic lesion around the left eye, in laboratory; urine dandity: 1001, pH; 6.0, CBC: normal range, serum biochemistry; AST; 30U/L ALT: 10U/L LDH: 279U/L, CK: 3816mg/dl, Myoglobin: 234mg/dl. Cranial CT was normal. Patient was diagnosed with rhabdomyolysis. To prevent acute renal failure due to rhabdomyolysis, 2000 cc 0.9% saline, and 2000 cc D5W was ordered and 1mEq/kg bicarbonate infusion was begun to alcalinize the urine. Urine pH was elevated to 8. Parenteral 40 mEq/day potassium was administered for hypokalemia. At the sixth day of the hospitalization patient's consciousness was returned. At the 14th day, biochemical parameters returned to normal range, and the patient was cured and discharged without any complications.

Conclusion: Intoxication with chlorophenoxy compounds caused to rhabdomyolysis and to prevent developing of acute renal failure due to rhabdomyolysis, beginning the adequate therapy early is mandatory.

PP-150 - Clinical Nephrology

Sonographic Study of Kidney Size in Aged People

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Our study aimed to ascertain the number of aged people with abnormal size of their kidneys. We studied 734 people over 65 years of age. Their kidneys were examined by sonography during the period 1-01-2007 until 31-12-2008. We measured the kidney dimensions and parenchima thickness. We considered as "aged kidney" when the length of kidney < 9 cm and thickness of parenchima < 1 cm. We studied the different sonographic data of kidney size according to sex and age of the people. 49.3% of the examined people were males and their mean age was 72.5 years. 50.6% were females with their mean age 73.4 years. According to sonographic data it was found:

Our conclusion is that the physiologic process of ageing is a general phenomenon and kidneys are part of this process. The ageing kidneys do not represent a disease but a transforming phenomenon in people arriving at their physiologic end. It's not right the opinion that this process is observed in all aged people.

Kidney size in aged people

		Age	Nr of people	Percent
Physiologic kidneys	males	71.4	320	88.3%
	females	72.6	328	88.1%
Total			648	88.2%
Aged kidneys	males	73.1	42	11.6%
	females	72.6	44	11.8%
Total			86	11.7%
All persons			734	100%

PP-151 - Epidemiology and Basic Science

The Calcimimetic R-568 Retards Uremia-Enhanced Vascular Calcification and Atherosclerosis in Apolipoprotein E Deficient Mice

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Objective: Secondary hyperparathyroidism of chronic kidney disease promotes vascular calcification. Calcimimetics reduce serum parathyroid hormone, calcium (Ca), and phosphorus by calcium-sensing receptor (CaR) activation. Here we examined possible effects of the calcimimetic R-568 (R-568) on the progression of aortic calcification and atherosclerosis in apoE^{-/-} mice with chronic renal failure (CRF) and the potential implication of aortic smooth muscle cell CaR. **Methods-Results:** ApoE^{-/-} mice were assigned to 3 CRF groups and 1 non-CRF group receiving daily gavage with R-568, calcitriol, or vehicle. Serum Ca and phosphorus and parathyroid gland volume of CRF mice were decreased by R-568, whereas elevated serum FGF23 and total cholesterol remained unchanged. Both aortic plaque and non-plaque calcification was lower in R-568 mice, and so was atherosclerotic plaque area fraction. In vitro, R-568 induced a decrease in smooth muscle cell calcification when cultured in high phosphate medium. This decrease was abolished in CaR-SiRNA transfected cells.

Conclusions: The calcimimetic R-568 delayed the progression of both aortic calcification and atherosclerosis in uremic apoE^{-/-} mice. This effect was mediated via a better control of hyperparathyroidism including serum Ca and phosphorus. Direct vascular CaR activation also could have played a role in the observed effects.

PP-152 - Pediatric Nephrology

LY96, UPK1B Mutations and TLR4, CD14, MBL Polymorphisms in Children with Urinary Tract Infection

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Introduction: Aim of the study was to evaluate genetic variations of innate immune system such as MBL, TLR4, CD14, LY96 (MD2) and Uroplakin 1B (UPK1B) genes in children with recurrent urinary tract infection (UTI).

Methods: The study included 30 children with recurrent UTI and 30 healthy controls. Blood was drawn and analysed for genetic polymorphisms of MBL, TLR4 and CD14 genes by the PCR-RFLP method. Direct DNA sequencing analysis was performed for LY96 and UPK 1B gene mutation in 10 children from UTI group and 5 children from control group.

Results: TLR4 gene Thr399Ile polymorphism was not observed in any child. Genotype distribution and allele frequency of Asp299Gly polymorphism was similar in both groups (p=0.55). Codon 54 polymorphism of the MBL gene was similar in UTI and control groups (p=0.49). -159 CC/CT/TT genotypes of CD14 gene was similar between the two groups (p=0.14). UPK1B and LY96 gene DNA sequence analysis was similar in UTI and control groups.

Conclusion: This study is the first study in which different parts of the innate immune system was evaluated in UTI etiopathogenesis in Turkish children. The results do not point out a significant role of any of the genes evaluated in this study.

PP-153 - Pediatric Nephrology

A Case of Renal Failure and Hypercalcemia as Initial Manifestations of Extrapulmonary Sarcoidosis

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Sarcoidosis is a granulomatous, multisystem disease. Rarely, sarcoidosis may present with both renal failure and hypercalcemia. A 13 year boy presented stomach aches, malaise and weight loss of 3 months duration. Abdominal ultrasonography revealed initial nephrocalcinosis; routine biochemical tests hypercalcemia with Low PTH value. A chest X-ray film revealed diffuse reticulonodular infiltrates in both lung fields and hilar adenopathy (stage 2 sarcoidosis). The patient also had tubular proteinuria and polyuria and high values of urea and creatinin. Tubulointerstitial nephropathy was suspected. A renal biopsy specimen exhibited tubulointerstitial nephritis associated with tubular calcium deposits. No glomerular abnormalities were evident. Prednisolone therapy yielded a favourable outcome for both the renal and pulmonary involvement. During the corticosteroid therapy, measurement of the urinary beta-2-microglobulin concentration by SDS-PAGE proved a valuable monitoring tool for assessing the recovery of the tubular impairment.

PP-154 - Epidemiology and Basic Science

Left Ventricular Diastolic Function in Patients with Pre-Dialysis Chronic Kidney Disease Evaluated by Tissue Doppler Imaging

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Objective: Aim of this study was to investigate left ventricular diastolic function in asymptomatic, pre-dialysis patients in stage 4 and 5 of chronic kidney disease (CKD).

Methods: Thirty one CKD patients (16 males, mean age 66.0±10.6 years) and 21 healthy gender- and age-matched controls were assessed with conventional M mode echocardiography, pulsed-wave Doppler (PWD) and Tissue Doppler Imaging (TDI). Measurements of PWD parameters of transmitral flow (E, A velocities and the E/A ratio), and TDI derived mitral annulus velocities (E', A' and the E'/A' ratio) were performed in all subjects. As an index of LV filling pressure, E/E' was calculated.

Findings: Group of CKD patients had lower E' velocities (Septal E': 7.0 1.8 vs 9.6 2.0, p=0.000; Lateral E': 9.8 2.4 vs 11.6 2.5, p=0.013) and mitral propagation velocity (Vp: 34.7 6.5 vs 46.9 9.9; p=0.000) in comparison with controls. Ratio E/A did not differ significantly between patients and controls, but average E'/A' ratio was significantly decreased (p=0.009) and ratio E/E' was increased (p=0.003) in CKD patients compared to controls.

Conclusions: CKD patients had a higher prevalence of diastolic LV dysfunction in comparison to controls. TDI have shown to be more sensitive than the PWD in diagnosing a diastolic dysfunction.

PP-155 - Peritoneal Dialysis

Comparing Study between Continuous Ambulatory and Automated Peritoneal Dialysis in Macedonian Children on Peritoneal Dialysis

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Objective: The aim of this study was to compare the effectiveness and peritoneal clearances in children on continuous ambulatory and automated peritoneal dialysis.

Method: The study enrolled 20 patients (mean age 9.86±3.98 years), 13 of them (65%) was on CAPD, and (45%) 7 on APD regimen: 4 (57%) of APD started with Break point APD. After performing a PET, a series of clinical, biochemical and dialysis competent markers were evaluated after 2 months on PD.

Results: Serum urea and creatinine decreased significantly whereas hemoglobin and glucose increased. Mean peritoneal urea clearance (l/week) was 60.72±5.55 on CAPD, 72.25±7.76 on CCPD, and 91.91±10.36 on Break point APD; mean creatinine clearance (l/week/1.73 m²) was 46.01±6.63, 54.95±7.42, and 76.61±1.05, respectively. Both clearances were significantly lower on CAPD than on APD (P<0.001). CCPD was the automated technique that provided the best nocturnal urea clearance (P<0.01). Break point APD showed better nocturnal creatinine and urea clearance than CCPD (P<0.05).

Conclusions: This study confirms that APD is a dialysis technique which may benefit pediatric patients with end stage renal disease. Break point APD increased clearances compared to CCPD, though reducing the number of nocturnal alarms.

PP-156 - Clinical Nephrology

Early Structural Cardiovascular Abnormalities in Asymptomatic Pre-Dialysis Patients with Chronic Kidney Disease, Stage 4 and 5

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Objective: The aim of this study was to investigate: 1) cardiovascular morphological abnormalities in asymptomatic, pre-dialysis patients in stage 4 and 5 of chronic kidney disease (CKD) and 2) to evaluate possible risk factors.

Method: We carried out a cross-section study with 31 CKD patients (16 males, mean age 66.0±10.6 years, CrCl 16.5±5.5) and 21 healthy gender- and age-matched controls. A basic biochemistry and an ultrasonic study with conventional M-mode and two-dimensional echocardiography were performed in all subjects.

Findings: In comparison to controls, patients with CKD had significantly higher left ventricular mass index (LVMI: 177.9±40.6 vs 129.5±24.6; p=0.000) and higher prevalence of LV hypertrophy (LVH: 96.8% vs 71.4%; p=0.013, eccentric in 63.3%). Multivariate regression analysis showed that proteinuria, hemoglobin and serum creatinine were the only independent risk factors for LVMI (model R²=0.633). CKD patients had more frequently valvular calcification than control subjects (p=0.003): of the 31 patients, 16 (52%) had valvular calcifications (6 patients had isolated aortic valve calcification, 1 had isolated mitral valve calcification, and 9 had calcification of both valves).

Conclusion: Asymptomatic pre-dialysis CKD patients had a higher LVMI strongly depends on renal function and anemia, higher prevalence of LVH and more frequently valvular calcifications than control subjects.

PP-157 - Pediatric Nephrology

When does the Cardiovascular Disease Appear in Patients with Chronic Kidney Disease?

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Cardiovascular disease (CVD) is a leading cause of long term morbidity and mortality in children with chronic kidney disease (CKD). CVD has been characterized by the presence of functional (FA), and morphological abnormalities (MA). It is unknown that these appear which stage of CKD in children. We aimed to explore the prevalence, degree of CVD in patients with CKD and compared with healthy controls.

we studied 42 (20 on predialysis (PreD), 8on peritonealdialysis (PD), 14 on hemodialysis (HD) patients. CVD was performed by the same cardiologist who didn't know patients. FA was defined as aortic stiffness (As) (decreased aortic strain (S) and increased pressure strain normalized by diastolic pressure (Epx). MA was defined as increased cIMT and LVH (left ventricle mass index (LVMI) and left ventricle end diastolic diameter (LVEDD)).

The mean age was 13.3±5.3 years (range 3.5-23). The patients had lower S values than controls (0.35±0.23, 0.44±0.2, respectively, p<0.05) while Epx was higher than controls (2.46 ± 1.31, 1.32±0.09, respectively, p<0.05). 13 patients had As. In PreD group, FAs were lower than dialysis group while higher than controls. The patients (n=32) had increased cIMT than controls (0.58±0.14, 0.35±0.12, respectively, p<0.05). These were higher in PreD (p<0.05). We found that increased values of LVMI (42.4 ± 15.6, 28.8± 8.47, p<0.05)and LVEDD (3.44± 0.76, 2.59±0.34, p<0.05) higher in patients than controls. LVH was found in 32 patients. LVMI andLVEDD were higher in HD than other patients (p<0.05).

FAs were fewer detected in PreD group. MA appeared without hypertension in PreDgroup. The indications and timing of dialysis should be re evaluated in children with CKD. In dialysis groups, cardiovascular changes were found lower in PD than HD. Therefore PD should be preferable than hemodialysis in children with CKD.

PP-158 - Epidemiology and Basic Science**Multiple Benefits of Screening for Chronic Kidney Disease**

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Chronic kidney disease (CKD) is a major global public health problem. The number of patients on RRT has doubled every decade since 1980, and prevalence of CKD in the early stages is also markedly increased. Also, CKD is a significant risk factor for cardiovascular morbidity and mortality. The only effective approach to this problem is prevention and early detection of CKD.

In recent years, screening studies have been carried out in several countries. The results of these studies have defined the scope of the problem and indicated which population groups were at risk for CKD. Also, screening studies indicated risk factors for CKD development.

Early identification of CKD enabled proper management of CKD that could prevent death from cardiovascular disease, delay the need for dialysis, and improve patient health at the onset of dialysis.

As early detection of CKD and its proper management was recognized as an imperative, a need for CKD management guidelines appeared. Several guidelines for the identification, management and referral of patients with CKD have been recently published. In addition, education of primary care physicians on CKD and increased awareness of risk factors for CKD and co-morbidities associated with CKD were undertaken in several countries.

PP-159 - Epidemiology and Basic Science**Belgrade Screening Study of Kidney Disease**Visnja Lezaic¹, Sanja Bajcetic², Gordana Perunicic Pekovic³, Dana Bukvic⁴, Nada Dimkovic², Ljubica Djukanovic⁵¹Departments of Nephrology Clinical Center of Serbia, Belgrade, Serbia²Departments of Nephrology Clinical Center Zvezdara, Belgrade, Serbia³Departments of Nephrology Clinical Center Zemun, Belgrade, Serbia⁴Institute for Endemic Nephropathy Lazarevac, Belgrade, Serbia⁵Academy of Medical Science SMS, Belgrade, Serbia

Rapid growth of patients requiring dialysis made investigations of kidney diseases in the general population actual nephrology topic. Aim of the study was to analyzed frequency of kidney diseases in populations with increased risk for it.

Study included 924 patients (352 males, aged 63±11) selected from two high-risk populations for chronic kidney disease: 784 patients with hypertension-HTA for more than 5 years and 140 patients older than 60 without HTA. Serum/urine creatinine (Jaffe method), proteinuria-PRT (dipstick test), microalbuminuria-MAU (turbidimetry) were determined and urinary sediment examined. Glomerular filtration rate (eGFR) was estimated by MDRD equation. Majority of patients had positive family history for HTA (63%). Hypertensive patients had HTA for 11±8 years and 92% of them were treated with ACEI. eGFR<60 ml/min/1,73m² and/or PRT had 40% of patients with HTA and 28% of patients older than 60 without HTA. The most frequent pathological finding was reduced eGFR (25% patients), MAU and/or PRT without pathological urinary sediment (16%), and pathological urinary sediment (8%). GFR negatively correlated with age, systolic blood pressure and duration of HTA.

High frequency of kidney disorders in examined groups directed attention of general practitioners and patients to risk for chronic kidney disease and necessity for its prevention and adequate management.

PP-160 - Epidemiology and Basic Science**Overweight, Obesity and High Blood Pressure in Adolescents**Aikaterini Garopoulou¹, Dimitrios Athanasopoulos², Eleni Chelioti³,Antonios Zagorianos³, Sotiris Mikros³, Athanasios Georgiou³, Gabriel Papadakis³¹Department of Pediatric Clinic, Vouvaleio, General Hospital of Kalymnos, Greece²Department of General Medicine, General Hospital of Piraeus, Tzaneio, Athens, Greece³Department of Nephrology and Renal Unit, General Hospital of Piraeus, Tzaneio, Athens, Greece

Objective: Children with elevated blood pressure are at high risk of being hypertensive in adulthood with all the consequences in renal function. Aim of this study was to investigate the influence of body weight, height, age and gender upon blood pressure in adolescents.

Method: It was performed a cross sectional study. Two hundred-fifteen adolescents (106 males/109 females, age range 13-15 years) were recruited from a high school. It was recorded the anthropometrical data, systolic blood pressure (SBP) and diastolic blood pressure (DBP). Obesity was defined according to the International Obesity Task Force (IOTF) curves. Statistical analysis was performed using t-test and General Linear Regression with backward process.

Results: Systolic blood pressure and DBP were different between two genders (p<0.001 and p=0.016 respectively). Obese and overweight adolescents had significantly higher SBP and DBP than normal subjects (p<0.01 and p<0.001 respectively). In multivariate analysis for SBP it was revealed association with gender, body weight and the age of 15 years-old. In multivariate analysis for DBP it was revealed association only with body weight.

Conclusions: Our results suggest that overweight and high blood pressure are strongly associated in adolescents. However, the usefulness of systematic screening of hypertension in adolescents is still controversial.

PP-161 - Epidemiology and Basic Science**The Acute Effects of Different Vaccinium Berries Supplementations on Oxidative and Antioxidant Status of Rats**Sema Kalkan Uçar¹, Hatice K. Yıldırım², Yasemin D Akçay³, Eser Sözmen³,Mahmut Çoker¹, Soner Duman⁴¹Department of Pediatric Metabolic Disease, Ege University Medical Faculty, Izmir, Turkey²Department of Food Engineering, Ege University, Izmir, Turkey³Department of Biochemistry, Ege University Medical Faculty, Izmir, Turkey⁴Department of Nephrology, Ege University Medical Faculty, Izmir, Turkey

Background: The etiology of cardiovascular disease in kidney pathology is multifactorial and increasing evidence points to the important contribution of "nontraditional" risk factors including oxidative stress and inflammation. Vaccinium berries (blueberry, bilberry) are widespread consumed fruits, considered to be rich in anthocyanin pigments, known as potent antioxidant.

Methods: The present experiments were performed to study the possible acute antioxidative effect of oral bilberry administration (containing low and high alcohol/sugar) on the rats. Oxidative and antioxidative status parameters in blood and tissues were measured at baseline and six hours after the administration.

Results: There was slight, but statistically significant increase in the level of antioxidative blood and tissue parameters at postadministrative status (p < 0.05). The results of grouping of different analysed parameters in n-dimensional space with different supplementary samples demonstrated the relation of lower sugar supplement and malondialdehyde; high alcohol supplement paraoxonase; low alcohol supplement and superoxide dismutase, ferric reducing antioxidant power, malondialdehyde.

Conclusions: The results suggest that long-term supplementation with bilberry extract will be more promising as the way to control the antioxidant status in rats. It is now important to assess treatment options that reduce oxidative stress, which is increased in patients with renal impairment.

PP-162 - Epidemiology and Basic Science

Leptin and Antihypertensive Therapy

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Introduction: Patients with essential hypertension and central tip of obesity are hyperleptinemic. Chronic hyperleptinemia can cause end organ damage, including renal injury. Today it is well known that same antihypertensive therapy like angiotensin converting enzyme inhibitors (iACE) and beta blockers (BB) may reduced serum leptin levels and preserved renal damage. The aim of this study was to investigate the clinical influence of the antihypertensive therapy on serum leptin levels in patients with essential hypertension and central tip of obesity.

Material-Methods: We measured: waist circumference (WC), systolic (SBP) and diastolic blood pressure (DBP), serum leptin levels (Human Leptin IRMA DSL -23100) and we calculated body mass index (BMI) in 51 obese, hypertensive, no diabetic subjects, divided in two groups. The group A: n=25 subjects, mean age 51, 8 years, more than 3 weeks under antihypertensive therapy with iACE, angiotensin receptor blockers (ARBs), BB, calcium canales antagonists, as monotherapy or their combinations, and group B: 26 obese, hypertensive subjects, without therapy, mean age 46 years. We investigate also 16 controls, mean age 59 age.

Results: In Group A the mean BMI was 32.05±5.7; WC 103.3±13.6; SBP 142.8± 16; DBP 90.2±10 and serum leptin levels 7.08±5. 4 (ng/ml). There was a positive correlation between BMI and leptin (R= 0.75, p< 0.05). In group B the BMI was 30.3±5.2; WC 99.6±15.6; SBP 154±17.8; DBP 96.6±11; serum leptin levels 22.9±21). There was a positive correlation between, BMI and leptin (R= 0.64, p< 0.05), negative correlation between gender and leptin (-0,45, p<0,05). Serum leptin levels differed between the groups (7. 08±5. 4 vs. 25.5±21, p= 0,0034) beside positive correlation with BMI in both group and serum natrium concentration (142 vs 140; p= 0,034). Gender, BMI and antihypertensive therapy are independent predictors of serum leptin levels in obese hypertensive patients.

Conclusion: Treatment with angiotensine converting enzyme inhibitors, angiotensine receptor blockers, beta blockers and calcium canal blockers, more then 3 weeks, as monotherapy or their combinations can reduced serum leptin levels, prevent the negative effect of hyperleptinemia reducing serum natrium levels independent of reducing of obesity.

PP-163 - Pediatric Nephrology

Imaging of Urinary Tract Infections in Childhood

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Introduction and Aim: Urinary tract infections (UTI) are major reason of chronic kidney disease in Turkey. In this study we aimed to analyze nessecity and timing of imaging studies.

Materials and Methods: 174 patient admitted to EUTF pediatric nephrology department between january 2006-january 2008 were analyzed prospectively. Patient symptoms related with UTI and unrelated symptoms with UTI laboratory findings have been recorded. Patients with fever, elevation of acute phase reactants, low urine osmolarity, pyuria, hypoactivity in DMSA scan were accepted as having a upper UTI.

Results: 174 patients (54 male, 120 girl) were included in study. In upper UTI group (n: 133) there were pathological findings in USG of 51 patients, in DMSA of 55 patients (%41.3) in MSUG of 57 (%42.8) patients.

In lower UTI group (n: 31), these pathological findings were in 19 (%61.3) and 17 (%41.4), 8 (%19.5)of the patients in USG, DMSA, MSUG imagings respectively.

When we made an evaluation of patients with normal USG pathological MSUG findings were in %35.7 of the patients. Therefore 1/3 of patients with normal USG and %28 of patients with normal DMSA findings could be skipped.

Conclusion: If USG is the only diagnostic imaging in first UTI, we could make misdiagnosis by undiscovering underlining the pathology. While making investigation of UTI we should be suspicious.

PP-164 - Pediatric Nephrology

A Case of Henoch-Schönlein Purpura with P369S Mutation in MEFV Gene

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Henoch-Schönlein purpura (HSP) is the most common vasculitis of childhood. The diagnostic criteria include palpable purpura with at least one other manifestation; abdominal pain, IgA deposition, arthritis or arthralgia, renal involvement. Familial Mediterranean Fever (FMF) is an inherited inflammatory disease common in mediterranean populations. It is characterized by recurrent episodes of fever, peritonitis, pleurisy, rashes and arthritis. HSP is the most common vasculitis seen in children with FMF. A 16 year old boy was referred to our hospital with 20 days history of abdominal pain. His physical examination showed palpable purpuric rashes symmetrically distributed on lower extremities. Abdominal examination revealed periumbilical tenderness. Laboratory tests showed an erythrocyte sedimentation rate, CRP and fibrinogen were elevated, serum urea, creatinine, complement-3, complement-4 and serum immunglobulin levels, antinuclear antibody, anti ds-DNA, antineutrophil cytoplasmic antibody were normal. Urinalysis revealed macroscopic hematuria and proteinuria with 24-h urinary protein excretion of 104.7 mg/m²/h. The fecal occult blood testing was positive. Based on these clinic findings, the patient was diagnosed to have HSP with renal, gastrointestinal tract and skin involvement. Since there are reports of increasing frequency of MEFV mutations in patients with HSP, we performed DNA analysis in our patient and found that he was carrying heterozygote P369S mutation.

PP-165 - Pediatric Nephrology

A 10-Year Old Female with APECED in Greece

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Autoimmune Polyendocrinopathy-Candidiasis-Ectodermal Dystrophy (APECED) is a rare autosomal recessive disease. APECED includes the presence of mucocutaneous candidiasis, hypoparathyroidism and Addison disease. It can also include other clinical manifestations such as alopecia, vitiligo, enamel dysplasia, onychomycosis, keratitis, hypothyroidism, autoimmune hepatitis, Diabetes Mellitus type I, asplenia, gastritis, malabsorption and testicular/ovarian failure. We report a 10-year-old female patient from the island of Rhodes who started attending our clinic at the age of three because of recurrent episodes of mucocutaneous candidiasis (mainly oral thrush) and onychomycosis from the age of two years. Candidiasis was treated with itraconazole or fluconazole continuously or at every relapse till the age of six when it subsided. At a follow-up admission at the age of eight, hypoparathyroidism was revealed requiring specific treatment. No other abnormalities or auto-antibodies were found. Sequencing of the AIRE gene revealed that the patient was homozygous for the mutation T16M (p. Thr16Met, c. 47C>T); both parents were carriers. This is the first reported case of APECED in a Greek family. The clinical and genetic findings are consistent with published cases; however, the causative mutation T16M is very uncommon. Its presence in homozygosity confirms its role as classical APECED mutation and is presumably due to unsuspected consanguinity.

PP-166 - Epidemiology and Basic Science**Epidemiological and Clinical Problem on Viral Hepatitis (B and C) in Department for Nephrology and Dialysis in Gostivar in Period (1995-2009)**

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Viral hepatitis B and C are epidemiological, clinical problem at Center for Hemodialyses. The aim of work, is to see problem of hepatitis B and C in Center for hemodialyses and nephrology. In period from 14 years from 210 patients, 35 (38%) are HBSnAg (B) positive, 155 (62%) are HBSnAg (B) negative, patients with clinical active hepatitis B are 11 (25%), patient with clinical persistence hepatitis B (confirm with hepatic biopsy and clinical laboratory) are 9 (20%). Mortality on patients with hepatitis B in this period for 14 years is 3 (2%). In period 2000-2009 year, the patients are investigated in praedialyses treatment 10, and 40 with dialyses treatment. Predialysis patients are HBSn negative and HCV negative and preventive (Engerix B) for hepatitis B. Dialyses patients are investigated, clinical and laboratory and has (B-, C-, 14 patients), (B+C- one patient), (B- C+ 15 patients), (B+ C+ 9 patients). From these patients (seven are for donor kidney transplantation). They are in program with Pegasus. From investigations are found (patients who are HCV positive-genotip I-five with titer from 550.000 to 850.000 I U/ml and one with genotip IIb with high titer from 850.000 U/ml), and one is with HbSn positive and AntiHbSn negative. Patients after 48 weeks treatment with Pegasus (135JE sc) are HCV negative (four patients is with kadaveric kidney transplantation).

PP-167 - Clinical Nephrology**Renal Manifestations of Hepatitis C Virus Infection**

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Chronic infection with hepatitis C virus (HCV) can lead to the immune complex syndromes of cryoglobulinemia and membranoproliferative glomerulonephritis (MPGN). The pathogenetic mechanisms for these conditions have not been defined, although they are clearly caused by the chronic viral infection. HCV is a unique virus containing a structural envelope protein (E2) that binds to a specific receptor on the surface of B cells (CD81). TH1 polarization accounts for upregulation of certain cytokines and downregulation of others, stimulating the B cell clones to produce immunoglobulins that are present in cryoprecipitate. Hepatitis C also is a complicating factor among patients with end-stage renal disease and renal transplants. While the prevalence of HCV infection is not associated with the degree of CKD in the general population, dialysis patients are at increased risk, especially those who are older and may have become infected prior to the implementation of universal precautions, improved needle handling, and introduction of EPO, which has led to lower transfusion rates. Prevention of spread is particularly important in these patients because HCV infection is associated with significant worsening of survival on dialysis therapy, as well as after kidney transplantation. .

PP-168 - Pediatric Nephrology**Henoch-Schönlein Purpura Nephritis in Children: Risk Factors, Prevention, and Treatment**

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Aim: To identify risk factors for a child with Henoch-Schönlein purpura (HSP) either to develop nephritis (HSPN) or to contract progressive course and to obtain the currently available evidence on the efficacy of treatment options both in preventing and treating the established renal disease.

Method: Review of the literature published over the last two decades.

Results: Persistent or recurrent purpura, severe abdominal symptoms, and an older age proved as the most significant risk factors for later HSPN. The risks of long-term renal impairment are highest in children having at presentation nephritic/nephrotic syndrome and/or more than 50% of glomeruli occupied by large crescents or sclerosing lesions. Randomized controlled trials (RCT) do not support short course prednisone at presentation of HSP in preventing persistent renal disease. Many uncontrolled studies using various treatment regimens have reported outcomes considered to be better than expected. However, the data from RCTs are sparse and no treatment options for the established renal disease can be currently recommended based on RCTs.

Conclusion: The existing evidence does not support of short course prednisone in preventing persistent renal disease. A well designed RCTs are needed in children with moderately severe or rapidly progressive (crescentic) HSP nephritis.



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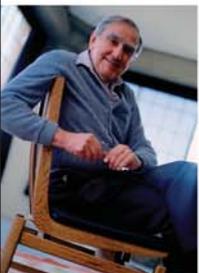
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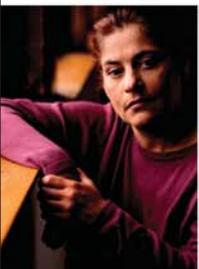
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 Zvezdakoska, J. PP-166
 Zylfiu, B. PP-019

NOTES

Hyperphosphatemia Management



Shaping the Future of your Dialysis Patients



Efficacy

Renagel® effectively lowers serum phosphorus.¹

Safety

Renagel® does not accumulate and attenuates calcification.^{1,2}

Survival

Renagel® improves survival of dialysis patients.³

genzyme

 **Renagel**®
(sevelamer)
Right from the startSM

1. Chertow GM, Burke SK, Raggi P et al. *Kidney Int.* 2002;62:245-252

2. Plone M, Petersen JS, Rosenbaum DP et al. *Clin Pharmacokinet.* 2002;41:517-523.

3. Block GA, Raggi P, Bellasi A et al. *Kidney Int.* 2007;71:438-441.

Product Summary Renagel® 800 mg film-coated tablets. **Active substance:** sevelamer. Subject to medical prescription. **Composition:** Each tablet contains 800 mg sevelamer. Each tablet also contains silica, colloidal anhydrous and stearic acid. The tablet coating contains hypromellose and diacetylated monoglycerides. The printing ink contains iron oxide black (E172), propylene glycol and hypromellose. **Therapeutic indications:** Renagel® is indicated for the control of hyperphosphataemia in adult patients receiving haemodialysis or peritoneal dialysis. Renagel® should be used within the context of a multiple therapeutic approach, which could include calcium supplements, 1,25-dihydroxy Vitamin D3 or one of its analogues to control the development of renal bone disease. **Contraindications:** Hypophosphataemia or bowel obstruction. Hypersensitivity to sevelamer or to any of the excipients in the product. **Possible side effects:** In parallel design studies involving 244 haemodialysis patients with treatment duration of up to 54 weeks and 97 peritoneal dialysis patients with treatment duration of 12 weeks, the most frequently occurring (≥ 5% of patients) undesirable effects possibly or probably related to Renagel were all in the gastrointestinal disorders system organ class. Data possibly or probably related to Renagel from these studies (299 patients) and from uncontrolled clinical trials (384 patients) are listed by frequency here next. Gastrointestinal disorders: nausea, vomiting (very common) and diarrhoea, dyspepsia, flatulence, upper abdominal pain and constipation (common). The reporting rate is classified as very common (≥1/10), common (≥1/100, <1/10), uncommon (≥1/1,000, <1/100), rare (≥1/10,000, <1/1,000), very rare (<1/10,000), including isolated. Most of these events are commonly observed in patients Stage 5 Chronic Kidney Disease and are not necessarily attributable to Renagel®. **Post-marketing experience:** In very rare cases, intestinal obstruction and ileus/subileus have been observed in patients during treatment with Renagel®. **Product Licence holder:** Genzyme Europe BV, Gooimeer 10, 1411 DD Naarden, The Netherlands. **Date of revision of text:** 19th December 2008. Detailed information on this medicine is available on the European Medicines Agency (EMA) web site: <http://www.emea.europa.eu>. **Attention:** Please see full prescribing information.

