ABSTRACTS

Evaluation of kidney functions in children after bone marrow transplantation

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PP

This study comprises the follow up of kidney functions in 33 patients -20 male, 13 female- after bone marrow transplantation (BMT). The mean BMT age was 9.03±4.75 years and follow up period ranged between 1-66 months (23.09±22.19). The primary diagnosis were acute myeloblastic leukemia in 12, thalassemia major in 10, aplastic anemia in 3 and various other diseases in 8 individuals. The patients were assessed with regard to the nephrotoxic effects of drugs like cyclosporin A, vancomycin, amphotericin B and episodes of venoocclusive disease (VOD), graft versus host disease, sepsis, hemorrhagic cystitis, hypertension and hemodynamic instability were also noted. Kidney function tests and scintigraphic imaging of the patients were accomplished consecutively. Eight patients developed renal failure in the first month of transplantation and one of them needed hemofiltration. As far as VOD development was concerned, significant statistical difference was found between the patients with and without renal failure ($p<0.01$) in the first month period. Six of the patients died in the first 3 months after BMT. None of them had renal failure. Chronic renal failure was not observed among the patients who had survived. One other patient who did not have renal failure in the first month developed renal failure in the third month. The cause was considered to be nephrotoxic drugs. Nonetheless, the kidney function tests turned out to be completely normal later on. Overall, we have concluded that long term follow up of kidney function tests is necessary for the patients who had BMT.

Synopsis of a case with Takayasu arteritis

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Takayasu arteritis is a chronic inflammatory vasculitis that involves aorta and its major branches. The etiology is unknown and the disease is rarely seen in childhood. A 14-year-old girl -with the history of leg and low back pain for 4 years- had been followed with the diagnosis of acute rheumatic fever and juvenile chronic arthritis previously. She has been operated for a right ureteropelvic stricture one year ago and after the operation the left kidney rapidly became nonfunctional. Accordingly, left nephrectomy was carried out as severe hypertension had ensued. In her physical examination blood pressure was 150/90 mmHg and a murmur was heard on the carotid regions bilaterally. Complete blood count, urine analysis and kidney function tests were all normal. Erythrocyte sedimentation rate was 66mm/hr and C-reactive protein was 5,2mg/dl. Magnetic resonance angiography revealed stenosis throughout a long segment of right renal artery and in the superior mesenteric artery. Angiography depicted a high degree of stenosis in the right carotid artery, irregularity in the proximal part of the left carotid artery and stenosis in the superficial femoral artery. Steroid therapy was commenced with the diagnosis of Takayasu arteritis. This case was reported to highlight such rare diseases–like Takayasu arteritis-in children and to orient the clinicians towards being careful against them within the differential diagnosis.

Peritonitis in patients with chronic peritoneal dialysis

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In this study, the frequency and the causes of peritonitis among the patients with peritoneal dialysis(PD) were evaluated. The diagnosis of peritonitis was established with the presence of abdominal pain and/or fever, a cloudy fluid and more than 100/mm3 leukocytes in the dialysate. Of the 80 patients, who had PD in our unit between the dates of 1989-2003, 25% were male and 75% were female. The etiologies of CRF was found to be as follows: reflux nephropathy 15(%18.8), tubulointerstitial nephritis 9(%11.3), MPGN 7(%8.8), urolithiasis 6(%7.5), FGS 4(%5), obstructive uropathy 4(%5), FMF-amyloidosis 4(%5), cystinosis 3(%3.8) and other diseases 19(%23.8). The cause could not have been found in 9 of the patients. The mean age at PD onset was 10.85±3.65 years (range 1 month - 19.17 years , median 11.87 years). The mean duration of PD was 20.94±19.86 months (1-90 months). Fifty-six patients were on CAPD and 24 patients were on APD program. The incidence of peritonitis, exit-site and tunnel infection were found to be

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0.84, 0.16 and 0.05 episode/patient year, respectively. The cultures yielded S.aureus and S.epidermidis in most of the cases. Etiological agent could not be isolated in 47 of the peritonitis episodes. Statistically significant difference was observed in the staphylococcal carrier state of patients with and without exit site infection ($p<0.05$) but not with respect to tunnel infection ($p>0.05$). To summarize, in children under PD, peritonitis is an important complication that has an indisputable effect on the morbidity and mortality of these patients; thus it entails intimate follow up and prompt management.

Renal tubular dysgenesis

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Renal tubular dysgenesis (RTD) is a recently described, autosomal recessively inherited abnormality of renal development ,characterized by short and poorly developed proximal convoluted tubules and is always mortal. We report here a case diagnosed at autopsy. Our patient was the first child of first degree relative parents, born at 33 weeks' gestation by spontaneus vaginal delivery. The baby was severely depressed and was resuscitated at birth.The ultrasonography at the 32nd week of gestation demonstrated oligohydramniosis. Oliguria was detected at the second day of life. Laboratory analysis demonstrated renal failure. Physical examination showed Potter facies and bifussur edema. The sutures and the fontanelles were extremely wide. The child died with sepsis on the 15th day of life despite peritoneal dialysis therapy. Postmortem examination showed that the kidneys were of normal gross configuration. Histological findings were compatible with RTD. The glomeruli were normal but increased in number. The cortical tubules were lined with poorly differentiated cuboidal epithelial cells, staining with epithelial membrane antigen(EMA), indicating the tubules were not proximal tubulus. Pulmonary hypoplasia and hypocalvaria were also found. In conclusion, regarding the frequency of autosomal recessive diseases in our country, pediatricians and pediatric nephrologists should be aware of the prenatal diagnosis of this entity.

Urolithiasis in children

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Urinary stones are one of the causes of renal failure(RF) in chidren, and is endemically seen in Turkey. In order to detect the causes and clinical findings we evaluated 421 children with urolithiasis, admitted to our hospital between 1993 and 2003 retrospectively. The mean age was 70.02±48.58 months (2mo-16yr). 70 of them (16%) were under one year of age. A history of urolithiasis in family members was obtained in 47%, RF due to urolithiasis in 8%. The most frequent complaints on admission were pain and macroscobic hematuria (55 and 38% respectively). A history of urinary tract infection was present in 62 % of infants, 30% of older children. Seventeen patients (4%) already had renal failure on admission. 22 patients had urogenital anomalies. One had autosomal recessive polycystic and one had autosomal dominant polycystic kidney disease. The analysis of 135 urinary stones revealed: 83 calcium, 15 cystine, 22 ammonium phosphate, 9 uric acid, 6 xanthine stones. Among these 32 had hypercalciuria, 15 cystinuria, 16 hypocitraturia and 6 hyperuricosuria. Hyperparathyroidism was found 3 patients with hypercalciuria, 2 had a history of using high doses of vit-D, one had the diagnosis of Williams's syndrome. Three patients with uric acid stones had glycogen storage disease, one fructose intolerance and one a deficiency of ornithine transcarbamylase. As a result a metabolic cause was detected in 82 patients undergoing urinary stone analysis(60%). Regarding that 13% of our cases with ESRD is due to urolithiasis and 23 % of these having a metabolic cause, we conclude that metabolic evaluation and proper treatment of urinary stones is important for our country.

Influence of different dialysis membrane types on cardiac-specific troponin T levels

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The aim of this study, is to determine the influence of the type of membrane (high versus low-flux) used in a hemodialysis (HD) session on the levels of cardiac-specific troponin T (cTnT). The cTnT levels of 23 patients in HD were measured in two consecutive sessions. Low flux (LF) cellulosynthetic membrane (Hemophan) was used in the first session, substituted by high flux (HF) synthetic membrane (Polysulfone) in the subsequent one. Baseline cTnT values of the HD patients were compared to those of a control group of 23 healthy subjects. The HD group showed significant ($p<0.001$) higher levels of cTnT compared to those of the control group (0.054±0.35 μg/L and 0.026±0.21 μg/L respectively). There was no significant change of cTnT levels during the HD session when HF membrane was used (0.056±0.036 μg/L, 0.055±0.034 μg/L pre and post HD values respectively). However the use of a LF membrane resulted in significant increases of post-HD cTnT levels (0.053±0.033 μg/L, 0.067±0.047 μg/L respectively). The exact reason for this remains to be investigated. Possible explanations seem to be hyperfibrogenaemia, the presence of middle molecular weight molecules or haemoconcentration, coupled to the incomplete clearance of cTnT by the LF membrane. In HD with HF membranes, the increase of

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cTnT for the above reasons is possibly compensated by increased clearance of the molecule via convection transfer. Hemodialysis patients have significantly increased levels of cTnT in the absence of acute ischaemic events. Due to the different effect of the HD membrane used on the levels of cTnT it is suggested that its measurement should precede the HD session.

Etiology, clinics, treatment and mortality of acute renal failure in Konya

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Since acute renal failure (ARF) is a cause of high morbidity and mortality, it needs to stay long time in hospital and its treatment is expensive and fairly restricted. The initial approach to the patients with ARF should be focused on preventing future injury to the kidney. Two hundred and eighty three who patients with ARF who were treated at our Nephrology Clinic from January 1996 to June 2002. were investigated retrospectively with etiology, clinics and laboratory characteristics, results of the treatment and mortality. The mean age was 52.3±18.7 years. Ratio of the patients with hospital-acquired ARF was 38.8%. It was determined that renal causes (61.2%) were responsible from most of the patients with ARF. Causes of ARF were medical (63.95%), surgical (23.67%) and obstetrics (12.36%). In 25% the patients that ARF was developed with multiple etiology, that the ratio of obstetrics related ARF was 12.4%. HELLP syndrome was seen in the most of those cases. The signs of hypervolemia were present in approximately half of the cases. Ratio of oliguric patient was 59.7% and mean time of oliguria was 5.2±4.1 day. We determined hyperpotassemia in 12.5% of the patient and hypoalbuminemia (serum albumin level < 3.5 g/dl) in 47% of the patient. Serious hyperpotassemia and necessity of dialysis was determined in 2.5% and 35.3% of the patients, respectively. Both mortality and ratio of oliguric patient were high in these patients. The necessity of dialysis and ratio of complete/partial improving (82.2%) were higher in ABY patients with oliguria than in ARF patients without oliguria. But there was not significant difference between ratios of mortality. Irreversible renal insufficiency was not developed in none of the nonoliguric cases. 7.4% of ARF patients was deceased. Main causes of the death in ARF patients were infection (31.8%) and cardiovascular events (27.2%). In conclusion, medical problems are important in the etiology of ABY and obstetric cases are seen in high ratio. Because of high ratio of necessity of dialysis, needs of long time hospitalization, high cost, early diagnosis and prevention of ARF are important. Since most ARF cases are irreversible, early diagnosis and appropriate treatment are very important for survive. Mortality ratio was found low in our cases. This situation may explain with medcal causes are first in importance in the etiology and our is a Nephrology clinics. We are of the opinion that early informing to the nephrologist and to follow and treatment in the nephrology clinic of the patients with ARF effect results positively.

Etiology and prognosis in the 36 cases which have acute renal failure related to the pregnancy

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In this study, in the 36 cases who were diagnosed Acute Renal Failure (ARF) related to pregnancy between the years 1997-2001, the reason of the ARF, clinic features and results of it has examined as retrospectively. The average age of the patients was 31.6±6.8 (17-46). The ARF has developed approximately on the 30th gestational week. 4 cases were seen in the first pregnancy (%11), 8 cases were seen in the second pregnancy (%22), 24 cases were seen in the third or later pregnancy (%67). 6 cases had a past history of chronic hypertension (%17). The reasons of ARF; were HELLP Syndrome and preeclampsia (%44) in 16 cases, postpartum hemorrhage in 7 cases (%19), decolman placenta in 5 cases (%14), septic or spontaneous abortion in 5 cases (%14), and eclampsia in 3 cases. The 5 cases related to the abortion were seen (%14) in the first trimester and others were developed (%86) in the third trimester or postpartum period. In the 9 cases (%25) there were intrauterine dead fetuses. 24 cases (%67) which were developed ARF had hypertension. 6 cases (%17) which were developed ARF had hypotension related to the vaginal bleeding. All cases had oliguria and the avarage duration of oligoruia in patients with ARF were 4.8±8.7 (2-27) days. The avarage of the staying period in the hospital was 11.7±7.6 (4-28)days. In 15 cases by ceserean section (%48), in 16 cases by induction (%52) the pregnancies were terminated. There had been antenatal dead in 3 cases. The avarage of Apgar score was 5.4±2.7 (0-8) and the avarage of birth weights was 1570±727 (300-3400)grams. Hemodialysis was applied to 17 cases (%47), only medical treatment applied to 19 cases (%53). In 2 cases septic shock, in 3 cases dissemine intravasculer coagulation(DIC), in 4 cases Adult Respiratory Distress Syndrome (ARDS) and pulmonary edema, in 1 case puerperal infection, in 1 case acute cortical necrosis, in 3 cases gastrointestinal bleeding developed. 32 cases were improved completely (%89). 3 cases (%8) died because of insufficiency of multi organs (DIC and septic shock, DIC + gastrointestinal bleeding and ARDS). One case has taken to continuous hemodialysis program because there had been cortical necrosis. As a result, the ARF related to the pregnancy has seen commonly in the third or the later pregnancies and the most common reason was HELLP Syndrome,

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decolman placenta, and postpartum hemorrhage and it caused a high risk for fetal and maternal mortality was detected. Therefore, we think that the number of the pregnancies should be limited and especially multipar pregnancies must be closely controlled for ARF.

Relation between carotid intima media tickness and other cardiovascular risk factors in chronic renal failure patients

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Aim: We aim to determine the association between increased mean carotid intima media tickness (MCIMT) that well known the sign of early atherosclerosis and different Cardiovasculer disease (CVD) risk factors in chronic renal failure patients with high KVD mortality. Method: 36 HD and 31 CAPD patients bilateral carotid artery were examined with B mode ultrasonography and CIMT was measured by same sonographer. All patients divided 2 groups according to MCIMT 0.7-1 mm and high than 1 mm. Both groups compared for age,sex, dialysis time, blood pressure, pulse pressure, left ventricul mass index (LVMI), plasma homocystein, serum albumin and lipid levels. Pearson correlation test used to confirm the association. In addition all patients telegraphies check for the aterom plaques. Result: We established positive correlation between MCIMT and age, LVMI, systolic blood pressure, homocystein level and presence of carotid artery plaque. Despite of no correlations between MCIMT and sex, dialysis type, albumin, lipid and hemoglobin levels. Conclusion: Carotid intima media tickness is valuable and useful method to estimate atherosclerosis in chronic renal failure patients. Plasma homocystein level is associated with increased carotid intima media tickness. Table: 2 groups clinical characteristics according to mean carotid artery intima media tickness

PARAMETERS	1. group (MIMT 0.7-1 mm)	2. group (MIMT>1 mm)	P
Age (year)	38,3±9,0	43,8±10,6	0,05
Mean IMT(mm)	0,95±0,06	1,18±0,13	0,001
Serum albumin(mg/dl)	3,8±0,7	4±0,3	NS
Homocystein(mMol/L)	20,5±7,4	24,2±26,2	NS
Cholesterol(mg/dl)	192,8±61,0	182,4±47,7	NS
Triglycerides(mg/dl)	225±126,0	211±129,7	NS
Prevelance of CVD(%)	2(%12.5)	13(%25)	NS
Prevelance of DM(%)	0	8(%15)	NS
Prevelance of smokers(%)	2(%12.5)	10(%19)	NS

Hyperhomocysteinemia in Bulgarian renal patients

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Hyperhomocysteinemia, a consistent finding in renal patients (pts), is now widely recognized as an independent risk factor for vascular disease. The aim of the study was to evaluate the influence of renal function on homocysteine (Hcy) plasma levels in Bulgarian patients. Totally 301 pts (202 males and 99 females) were evaluated. The group of pts was divided in four subgroups, which were as follows: 121 pts (104 m, 17 f) with ischemic heart disease without evidence of active renal disease; 119 renal pts (67 m, 52 f) with plasma creatinine between 60 and 960 μmol/l ; 30 hemodialysis pts (14 m, 16 f); 31 kidney recipients (17 male, 14 female). 70 healthy subjects formed the control group. Hcy plasma levels were determined by the Abbott IMx Homocysteine Assay. Folate (Fol) and Vitamin B12 (B12) were determined using Bayer ACS:180 assays. Renal function was evaluated by the plasma creatinine (Cr) and by the creatinine clearance calculated by the Cockcroft-Gault formula. We found significantly higher mean total plasma Hcy level in the dialysis group (36.62 ± 10.1 mmol/l), and in the transplanted pts group (including these with normal creatinine) (27,07 ±11,82 mmol/l as well as in the renal pts group (19,93±10,07 mmol/l) compared to plasma Hcy of the control group (13.89 ± 5,94 mmol/l). Moreover plasma Hcy level was elevated (31,40±14,89 μmol/l) in those 6 pts with ischemic heart disease which displayed slightly elevated creatinine (from 141,1 to 158,6 μmol/l). While the remaining pts from this group demonstrated near normal plasma Hcy. Our study suggests that impaired renal function is a powerful determinant of plasma Hcy levels. It is more striking than influence of hypovitaminemia on plasma Hcy levels.

The efficacy of cyclosporine in adults with minimal change disease

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Cyclosporine has been used as a therapeutic agent in a number of idiopathic glomerular conditions. To evaluate the efficasy and safety of long term CsA treatment in adults with minimal change disease, we prospectively followed immunosupressive therapy in 7 patients (41 years mean age) for a median of 23 months. The prior steroid responces of

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these patients were 2 steroid-dependent (SD), 1 frequent-relapsed (FR), and 4 steroid-resistant (SR) type. Oral CsA was administered at the dose of 2,5 mg/kg/day in combination with prednisolone (16mg/day). Complete remission was obtained in all patients, apart from one of the SR patients in whom proteinuria was significantly diminished. The mean duration of CsA treatment to attain complete remission in SD and FR patients was 5,8 (±1,2) weeks and 8,4 (±3,4) weeks in SR patients. Teatment after complete remission continued for 12 weeks while the tapering period was 18 months. During the whole treatment period CsA administration was well toleratd and no signs of CsA toxicity were observd. In conclusion, though cyclosporine cannot replace corticosteroids as a first-line agent for most patients with minimal change disease, the present data suggest that long-term maintenance treatment in combination with CsA and low-dose of prednisolone are efficasious and safe in adult patients in whom classic steroid therapy was not succesful.

LDL apheresis in the treatment of a patient with resistant nephrotic syndrome

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Recently published studies suggested that aggressive lipid-lowering therapy may not only improve dyslipidemia but also decrease urinary albuminuria in patients with nephrotic syndrome. Therefore LDL apheresis was used in the treatment of a male patient (44 years old) with severe hyperlipidemia refractory to conventional therapy due to nephrotic syndrome, caused by membranous nephropathy type IV, which was resistant to steroid and immunosuppressive therapy. LDL apheresis was performed by direct haemoperfusion using a polyacrylate-based adsorber (DALI), once a week for one month, fortnightly for a two month period and then once every three weeks for two months. A total of 11 sessions were performed in a period of 20 weeks. The effects of the LDL apheresis on lipid parameters (total and LDL cholesterol, triglycerides, HDL, Lp(a), ApoB), renal parameters (serum creatinine, serum albumin, 24-h urinary albumin excretion), and safety parameters were repeatedly evaluated. During haemoperfusion sessions a dramatic improvement on serum lipid parameters was measured (mean acute reductions in total and LDL cholesterol, Lp(a), Tg, apoB were 45.7%, 50.2%, 56.6%, 34.6%, 48.7% respectively). Also fibrinogen fell by 11.5%, PT increased (from 10.07 to 10.93 sec), while PTT transiently increased from 32.2 to 64 sec. Platelet and leukocyte count were unaffected. The estimated time-averaged concentrations of LDLc and Lp(a) during the short-term weekly and fortnightly treatment were also statistically significantly lower than the pre-treatment levels (222,9 mg% vs 257,4mg% $p<0.01$ for LDL-c and 88.5mg% vs 104.4mg% for Lp(a) $p<0.01$), while urine albumin excretion rate remained unchanged. These results indicate that LDL apheresis effectively reduce the LDLc and Lp(a) levels in patients with hyperlipidemia due to nephrotic syndrome, while more frequent sessions might be able also to reduce the urine albumin excretion rate.

Trough and two-hours post-dose cyclosporine levels in stable renal transplant patients

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Cyclosporine (CyA) monitoring in renal transplantation is indispensable. Data suggest that single blood concentration measurement, two hours post CYA administration (C2) predicts better the exposure to this drug than trough levels (C0). We have studied 54 (37males) stable renal allograft recipients, median age 56 years (25-79), median duration of transplantation (Tx) of 8 years (0.6-16), under triple immunosuppressive therapy (CyA, prednisone, MMF). Fifty per cent of the patients were hypertensive. The mean serum creatinine concentration (mCr) of the first year post Tx was 1.33 ± 0.3 mg/dl (0.9-2.5) while mCr of the follow up years was 1.5±0.6 mg/dl (0.7-4.8). C0 and C2 measurements were performed monthly in all patients for 17 months. Acute rejection episodes of the past and during follow up were also analyzed. Mean C0 of CyA was 169±67 (42-406 ng/ml) and mean C2 816±298 (162-2650 ng/ml). Multiple regression analysis showed good correlation between C0 and C2 measurements ($r=0.7$, $p<0.01$) with no significant correlation of C0 and C2 levels with sex, duration of Tx, hypertension. C0 concentrations < 150 and C2 < 800 were related to higher frequency of the past acute rejections episodes (16 and 11 out of 19 respectively). In conclusion, C0 or C2 levels could equally predict drug exposure in these stabilized renal transplant patients. Levels of C0 <150 and C2 <800 were associated with higher frequency of past rejection episodes. Decision of which measurement to choose in stable renal transplant patients, is related to patient and nursing staff compliance.

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Emergency admissions of chronic renal failure patients for acute hemodialysis: incidence rates, causes and outcome.

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BACKGROUND: There are limited data on emergency admissions of chronic renal failure patients under maintenance Dialysis requiring acute hemodialysis (AHD) due to a potentially life-threatening condition. OBJECTIVE: To determine the frequency, incidence, causes and outcome of these emergency admissions for AHD. METHODS: Retrospective study of patients who were under maintenance Dialysis during 36 Months in the renal unit of Serres/Greece District Hospital. Data from 29,853 hemodialysis treatments concerning 113 patients were collected. We determine 323 cases of AHD and analyzed the frequency, incidence, causes and outcome of these admissions, defined as emergency when an unscheduled hemodialysis was performed due to a potentially life-threatening condition. RESULTS: Among 113 Patients a total of 323 AHD relating to 103 (91%) Patients were performed. Three groups were created, Group(I) 92 Patients needed 1-5 AHD (1,65/pt), Group (II) 6 Patients needed 6-15 AHD (7,3/pt), Group (III) 5 Patients needed >16 AHD (25,4/pt). The most frequent causes of admissions were severe fluid overload (63%), cardiovascular diseases (19%) and hyperkalemia (17.6%) in all three groups. During the period of study mortality was 100% in group III, 50% in group II and 18% in group I. CONCLUSIONS: A large number of hemodialysis patients required AHD due to a potentially life-threatening condition. The major causes of emergency admission are severe fluid overload, cardiovascular diseases and hyperkalemia. High incidence of emergency admission increases the risk of mortality. It is crucial to promote prevention strategies, particularly to optimize the control of fluid balance and dietary potassium intake, in order to decrease these admissions, which are placing high, demands upon health care resources.

Fibrate induced myopathy in renal replacement therapy patients

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Myopathy and rabdomyolysis, are relatively rare side effects of pharmacological therapy with fibrates. Especially in patients on renal-replacement therapy (RRT), the high plasma protein binding of the drug is associated with insufficient dialysis clearance with subsequent drug accumulation. In this case report we present two clinical cases of fibrate-associated myopathy in RRT patients, one on haemodialysis (HD) and the second on peritoneal dialysis (PD). Both patients were admitted in our clinic for malaise, fever, severe muscular pain and weakness of the limbs. Physical examination revealed reduction of muscular strength, tenderness and pain in limb palpation, without any evidence of CNS disease, signs of systemic infection or muscle injury. Biochemical examination demonstrated in both patients leucocytosis, high ESR and elevations of AST and ALT levels without any further sign of liver disease. Marked increase of serum levels of CPK, (3915 IU/L and 786 IU/L on HD and PD patient respectively, with normal CK-MB fractions), LDH (1629 IU/L and 1087 IU/L respectively) and myoglobin (1150 ng/dL and 920 ng/dL respectively) were observed. In both cases electromyography detected a myopathic pattern of injury. Since the patients, were receiving over the desk fibrates in doses not adjusted to the levels of their residual renal function the diagnosis of fibrate-induced myopathy was established. Offending drugs were discontinued and NSAIDs were given. Gradual improvement of patients general condition were observed while laboratory parameters achieved normal values within two weeks. Caution should be given in fibrates dosage on RRT patients to minimize the risk of toxic myopathy.

Carnitine levels in patients with moderate to severe impairment of renal function

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Carnitine is an impotant cofactor in fat metabolism and its depletion is associated with multiple clinical implications. However its status in predialysis patients has not been investigated. Methods: We evaluated carnitine metabolites by radioenzymatic method (free carnitine(FC), acylocarnitine (AC), total carnitine (TC) and the AC/ FC ratio) in 42 (28M, 14F) patients followed in outpatient clinic. Results were associated with age, levels of renal function, duration of renal impairment, hct, hb and lipid profile. Patients had a mean age of 69.8±9.8 years and their CrCl varied from 10.34 to 34.88 ml/min. Mean age of renal impairment was 8.3± 3.9 years. Levels of FC, AC and TC were towards lower normal levels, while AC/ FC ratio supervened the accepted upper normal value of 0.4 (mv±sd 0.45±0.21). The increased ratio was positively correlated to AC and negatively correlated to the duration of renal impairment, while no correlation was found with age, sex, ht, hb or lipids. When patients were divided according to their creatinine levels (group A:cr<2.5mg/dl, group B:cr>2.5mg/dl), group B appeared with higher AC /FC ratio (0.6±0.2vs 0.41±0.2, $p<0.05$). Even in moderately impaired renal function,

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AC/FC ratio appears to be increased at levels comparable to dialysis patients. In dialysis, this increase is attributed along with limited intake to greater removal of the FC. On the contrary, high AC/FC ratio in predialysis is attributed to greater reduction of AC renal clearance. In this subset of patients age and sex did not influence carnitine levels. Clinical implications of the above findings remain to be defined.

The factors determining the blood levels of aluminium and lead in patients of hemodialysis

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PP

The aim of this study was to determine the blood levels of aluminium (Al) and lead (Pb) and the relationship between the exogenous sources of these elements. A total of 19 patients on hemodialysis (9F, 10M; age[yrs]: 64.7±13.2 ; duration of hemodialysis [months]: 51.0±43.7) were enrolled in to the study. The patients were hemodialysed with polysulphone membranes and bicarbonate dialysate. Laboratory data were obtained before a standard hemodialysis session. The blood levels of Al and Pb were in normal ranges, 3.9 ± 3.0 mcg/L and 6.5 ±3.2 mcg/L , respectively. The level of Al , obtained from reverse osmosis water purification system was 0.1mcg/L and the level of Pb was negligible. Only two patients of 19 had used Al-containing phosphate binders for 4 months and the blood Al levels of these patients were 5.9 ve 8.1 mcg/L. The rest of the patients (17/19) are far from Pb sources. The blood Al and Pb levels of our patients on hemodialysis were not so high as those reported in previous manuscripts.

Which one is more effective: ethylene vinyl alcohol or polysulphone dialyser

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PP

Ethylene vinyl alcohol (EVAL) and polysulphone membranes are both synthetic dialysers. A total of 18 patients (7F, 11M; age [yrs] : 64.0±13.1; duration of hemodialysis [months]: 43.0±44.9; frequeency and time of hemodialysis: 3 times a week, 4 hours in 18 pts) on hemodialysis were enrolled in to the study. In the first 6-month period, only EVAL membranes were used to treat the patients. In the second 6-month period, we used polysulphone (Fresenius, F6) membranes. The data were obtained through 12 months . Compared to EVAL - period, the mean urea reduction ratio was higher in polysulphone – period, 52.7 ± 8.9 and 65.7±8.3, respectively ($p<0.001$). The mean erythropoietin dose (units/month) was lower in polysulphone - period than that of EVAL-period, 8000±14712 u/month vs 65000±18944 u/month, respectively ($p<0.05$). Compared to EVAL-period, the postdialytic mean arterial pressure (MAP) in the polysulphone group was significantly lower, 86±7.8 mmHg vs 97.4±10.7 mmHg, respectively ($p=0.001$). Despite the insufficient number of patients, we concluded that a more adequate dialysis could be reached by using polysulphone dialyser, compared to EVAL membrane.

Renal consequences in a patient with poorly controlled inflammatory bowel disease

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PP

Kidney stones are more common in patients with inflammatory bowel disease (IBD) than in the general population. In this work we present a female patient with Crohn's disease with severe renal complication due to the underlying disease. A 60-year old female had a long history of Crohn's disease. She has been treated with 5-ASA and azathioprine but did not adhere regularly to the prescribed drugs. She had bilateral nephrolithiasis, which ultimately lead to afunction of the right kidney and nephrectomy. The investigation of the renal status revealed mildly reduced GFR and normal blood pressure. There was moderate proteinuria (up to 1.0 g/day). The SDS-PAGE of urinary proteins revealed tubular pattern of the proteinuria. B2 microglobulin and alfa-1 microglobulin were significantly increased. Investigations of the lithogenic factors revealed severe hyperoxaluria (oxalate/creatinine ratio 1052 mM/M; normal 15-32) and hypocitraturia (citrate/creatinine ratio 20 mM/M, normal 107-653). Urinary glycolate was within referent values, confirming the diagnosis of enteric hyperoxaluria. In conclusion: our patient suffers from enteric hyperoxalurtia as a consequence of poor control of the IBD. Tubular proteinuria may have resulted from nephrotoxic effect of the ASA. Besides stone disease, drug nephrotoxicity and the risk for amyloidosis, renal prognosis is influenced by the hyperfiltration in the single kidney.

Peritoneal dialysis performance and incidence of peritonitis

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PP

Peritonitis is a very serious complication in peritoneal dialysis. Among technical factors associated to peritonitis rate, Y disconnect system, double bag system and APD are estab-

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lished to reduce incidence of peritonitis. No data in literature deal with dialysis performer and incidence of peritonitis. In the five-years period 67 patients (46 female, 21 male, mean age 52.9+12.7) starting CAPD were analyzed. All patients were on standard glucose containing dialysis solutions on single bag system or ANDY set. Patients were divided in two groups according to dialysis system used: 35 patients on Fresenius single bag system (group F) and 32 patients on ANDY set (group A). In self-performing dialysis group (S group) there were 34 patients, and 33 in helper group (H group). Patients in S group were younger than in H group (50.6 + 12.1 vs. 55.3+13.0 years, respectively, p=ns). The number of comorbidity conditions found, was statistically higher in H group: 2.91 + 0.54 vs. 1.84 + 0.88; p<0.001.The reasons for incapability of self-performance of CAPD in the helper group were: blindness/insufficient vision (4 cases), mental incompetence (3), impaired hand function (2), self-unconfident / inefficient (23 cases). All patients were examined once a year on changes in dialysis adequacy parameters, nutritional indices and peritonitis rate. All adequacy and nutritional indices examined didn't differ significantly between S and H group of patients except KT/V. Peritonitis rate was higher in H group, and occurs earlier than in S group In this study, peritonitis rate was evaluated according to subject performing dialysis exchanges: patient himself or helper. The incidence of peritonitis was found significantly lower in self-performing dialysis patients than in helper group. This effect was independent of the dialysis system used.

The appearance of pyelocaliceal system at urography in some urotract diseases: Roentgen presentation

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PP

Numerous pathological states of the urosystem reflect repercussions onto the state and appearance of the pyelocaliceal system. From the diagnostic point of view an insight into the state and appearance of the pyelocaliceal system is frequently the guiding roentgenological symptom at urography. The aim of our presentation is to review appearance of the pyelocaliceal system at urography by means of illustrations. In the paper there are presented the aspects of th epyelocaliceal system in certain anomalies, calculosis of pyelocaliceal system, renal papillary necrosis pyelonephritis, kidney tuberculosis, hydronephrosis of various etiology, renal tumors, vesico-urethary reflux and others. Taking in consideration some other symptoms following urography, clinical picture, lab and other reports, the authoirs make efforts to interpret in any specific case the reasons of changes in appearance of the pyelocaliceal system at urography is often the guiding roentgenological symptom.

Wilm's tumor: roentgenographic view

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PP

The paper presents characteristics, evolution stadiums, clinic and x-ray images and diagnostic examination methods of the Wilm's tumor. The author of the paper report that they have analyzed od 134 urographic examinations of children and that they have registered the Wilm's tumor in three patients (two masculine and one woman) of the age of 7 and 20 months and 3 years. In ona patient the Wilm's tumor was coupled with a kidney anomaly (ren duplex). Diagnosis in three patients was verified by the pathological examinations. The three patients underwent andoperative treatment - total nephrectomy. The author have presented the x-ray findings of the three patients.

Outcome and ESRD etiologies of pediatric chronic hemodialysis patients: single center experience

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PP

Objective and Aim: Renal transplantation is the best renal replacement treatment method for children with ESRD, but hemodialysis (HD) may be life saving method in the others. The aim of the study was to determine ESRD etiologies and outcome of children who were under chronic HD treatment. Material and Methods: One hundred children who were receiving chronic HD treatment in our center between January 1994 and April 2003 were included the study. Pre and post dialysis patient records were evaluated retrospectively. The Kaplan-Meier method was used for outcome analysis. Results: The mean and median ESRD age of patients was 10.7±3.0 and 11 years respectively. The male/female ratio was 1:1.5. The ESRD etiology was glomerulary diseases in 37%, chronic pyelonephritis and reflux nephropathy in 34%, congenital anomalies in 6%, urinary stone disease in 6%, interstisyel nephritis in 2%, malignancy in 1% and unknown in 14%. Focal segmental glomerulosclerosis (9%) and mesengioprolipherative glomerulonephritis (5%) were the most common glomerulary diseases. The mean follow up time was 15.1±14.6 months. Forty of 100 patients were referred to local dialysis center, 22 of 100 patients were transplanted, 17 of 100 patients were died and 21 of 100 patients were followed up with HD in our center. The causes of death were cardiovascular events in 13, infections in 2, hepatic failure in 1 and gastrointestinal bleeding in 1 patient. Ten of 17 deaths were seen in the first 6 months of HD. The survivals at 12 months, 2 years and 5 years were 86.1%, 81.7% and 45.7%. Conclusion: The most common

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etiology of ESRD was glomerular diseases and chronic pyelonephritis in our center and long-term survivals were not high as expected.

Bone and mineral metabolism in children under steroid treatment and the effect of prophylactic calcium and vitamin D therapy

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PP

Objective and Aim: steroids are the most important treatment in primary and relapsing nephrotic syndrome (NS). But steroid treatment has several side effects including deteriorated bone and mineral metabolism. The aim of the study was to determine effects of steroids and calcium plus vitamin D treatment on bone and mineral metabolism in children under prednisolone treatment. Patients And Methods: 40 children (27 boys and 13 girls) with NS (18 primary and 22 relapsing) were included the study. Their mean age was 4.6±1.8 years. All patients received prednisolone treatment (2 mg/kg/day for 4 weeks and followed by alternate day at same dose for 4 weeks). The patients were randomized treatment (vitamin D 400 IU plus calcium 1 gr daily) and control (no treatment) group. Bone mineral density (BMD), serum Ca, P, ALP, creatinine and urinary Ca, P excretions were analyzed prior and 2 months after the treatment. XR36 Northland Atkinson (Wisconsin USA) device (based on DEXA method, at L2-L4 levels) was used for BMD analysis. Results: BMD was significantly decreased in both treatment (0.54±0.15 to 0.51±0.1 gr/cm2, p=0.001) and control (0.52±0.18 to 0.45±0.16 gr/cm2, p<0.001) groups. But the percentage of BMD decreasing was found significantly low in treatment group (4.63±2.15% vs. 13.0±4.0%, p<0.001). Serum Ca (8.1±0.4 to 9.9±0.3 and 8.0±0.5 to 9.9±0.3 mg/dl respectively, p<0.001) and urinary Ca excretions (1.1±0.5 to 3.2±1.0 and 1.4±0.9 to 5.0±0.3 mg/kg/day respectively, p<0.001) were significantly increased in both treatment and control groups. Conclusion: Steroid treatment decreases BMD in children with NS. Vitamin D plus calcium therapy at current doses reduces but not completely prevent bone loss without any additional adverse effects.

Screening tests evaluation for microalbuminuria in diabetes mellitus

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PP

Microalbuminuria is a predictive marker for the early detection of renal disease and the identification of patients at high risk of developing complications of diabetes and hypertension. Early detection of risk of microalbuminuria could prevent early renal damage. To evaluate the clinical utility of Micral strips test compared with the nephelometric method for detection of microalbuminuria, we have studied 70 diabetic patients, with mean age 53.6±12.25 years. The first morning urine albumin concentration was determined by dipstick over 3 consecutive days. The other standard method to evaluate microalbuminuria was the albumin excretion rate measured by a nephelometric method in a 24-h urine collection, using the pyrogallol red test. 67 patients were positive for microalbuminuria (95.7%) by the nephelometric method, giving a positive predictive value of 91%: 51 patients had albumin excretion under 150 mg/24 h (76.2%) and 16 patients had albumin excretion of more than 150 mg/24 h (23.8%). 55 patients were positive for microalbuminuria with by Micral strips (78.5%), giving a positive predictive value of 88%: 47 patients had albumin excretion under 150 mg/24 h (85.4%) and 8 patients had albumin excretion of more than 150 mg/24 h (14.6%). In conclusion, we can say that the nephelometric method is a gold method for detecting microalbuminuria, but the Micral strips test is a rapid, valid, reliable and much less expensive method for microalbuminuria screening in diabetic patients, particularly in cases having financial problems.

The effect of vaccine bronchovaxom in patiens with IgA nephropathy: a pilot study

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PP

There were few studies concerning that vaccine Bronchovaxom in patients with atopic dermatitis decreased serum IgA. The aim of our pilot study was to evaluate the effect of that vaccine in patients with biopsy proved IgA nephropathy. Fourteen patient, 6 females and 8 males, mean age 39,8+/-11,64 years received each 10 days/ monthly for 3 months 1 tablet daily of Bronchovaxom. No other pathogenic therapy was applied during the study. Before and after treatment the following parameters were observed: blood

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pressure (BP), proteinuria (Pu), urine sediment (US), kidney function, cholesterol (Cho), triglycerides (Tg) and serum levels of IgA, IgG and IgM. There were not significant differences in serum creatinine, creatinine clearance, Pu, Cho, IgG and IgM. IgA decreased from 2,98+/-1,97 to 2,4+/-1,4g/l (p=0,06). Four patients were with higher levels of IgA before therapy and in 3 (75%) of them they decreased to normal range. Tg decreased from 1,6+/-0,9 to 1,2+/-0,4 (p=0,02). Two patients were with macroscopic hematuria that was not observed after therapy. We suppose that Bronchovaxom may decrease IgA levels and that may improve the clinical course and prognosis in IgA nephropathy but more longer observation with higher number of patients require to evaluate that findings.

Comparative study of hemodialysis catheters

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PP

Objective: A significant number of hemodialysis (HD) patients, submit HD treatment by central venous catheters. These patients often present complications during HD. Due to these problems the cost of HD treatment is higher than in other groups of HD patients. The aim of study was to enrich our experience in evaluation of the type of catheter, which is most suitable in particular, cases. Material-Method: We investigated 30 patients who were treated by HD in our Unit in Serres District Hospital for a period of 18 months. All these pts. were treated via central venous catheters. They were divided into two groups according to the type of catheter, permanent or temporary, and were comparatively studied. We examined the episodes of partial thrombosis, insufficient blood flow, infections and hemorrhages per month. The results of our study are presented in a table below:

Pts/catheters	Thrombotic episodes	Insufficient Bl.Flow	Infections	Hemorrhages
Perm-10	0,29	0,12	0,10	0,036
Temp-20	0,50	0,20	0,30	0,148

Conclusion: According to our study for this period of time, we find a significant differences in the frequency of the main complications as also in the sufficient function of the catheters. So the HD via permanent catheters is the acceptable solution for patients with limited access options because of the low frequency of complications and the comparatively lower cost.

The influence of urinary tract infections to the progression of autosomal dominant polycystic kidney disease

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OP

Urinary tract infections (UTI) are common in patients with autosomal dominant polycystic kidney disease (ADPKD). However, frequent episodes of UTI are less common and were seen more frequent in females than in males. We report our experience about the frequency of UTI and the follow-up in ADPKD patients during 20 years. 180 ADPKD patients were included in the study. Subjects were considered as having UTI if they had had two or more episodes of UTI. 108 treated patients were compared with 72 untreated patients. The therapeutic scheme for the treatment has been an urinary disinfectant – bactrim 480 mg 1cpr/die alternate weeks for three months, discontinued for three months, again alternate weeks for three months and so on. Another treatment alternative except bactrim has been nalidixic acid. UTI were observed in 60% of our ADPKD patients (108 patients). Treated pts with urinary disinfectants had a significant lower frequency of urinary infection ($p<0.001$) and hematuria ($p<0.001$) after one year than untreated pts. Moreover, treated pts demonstrated a slope of creatinine of 0.0007 vs. 0.0148 of untreated pts ($p<0.001$). We conclude that UTI are frequent in our ADPKD patients. The correct treatment of UTI decreases their frequency and has beneficial role in the rate of progression to renal failure in ADPKD pts.

Pompe's disease in a patient with two episodes of respiratory and renal insufficiency with a good outcome

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PP

Acid maltase deficiency (AMD) is a glycogen storage disease that affects all age groups. In both childhood and adult forms, the classic clinical picture is that of a progressive myopathy. Respiratory muscle involvement is common, may occur early in the course of the disease, and is the most frequent cause of mortality from AMD. We have described a case with two episodes of respiratory and renal insufficiency with a good outcome. A 20-year-old man was admitted after he noticed muscle pain, weakness, limpness, and darkly colored urine. Then he developed respiratory failure,

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which required mechanical ventilation for a month. On admission, clinical examination revealed mild pallor, but no jaundice. Peripheral pulses were absent in both legs, which were swollen and tender. There were no other apparent skeletal muscle injuries, blood pressure was 120/80 mmHg and axillary's temperature was 37°C. Urine output was 500 ml/day. Lung functions were markedly reduced, revealing global respiratory insufficiency. Abdominal ultrasound was normal. CPK increased to 13 000 UI/l. After intensive therapy he was discharged in good general condition and made a complete recovery of renal function. The same situation was repeated five years later. After two months, all parameters were normal. In the past medical story the patient reported recurrent childhood episodes of muscle pain and weakness followed by darkly colored urine after mild exercise. The family history revealed that his twin brother had died during the first year of life from cardiac problems. A muscle biopsy was performed, and fibroblast culture was made, which indicated acid maltase deficiency (glycogen storage disease type II [Pompe's disease]). The present case corresponds to a severe form of type II juvenile glycogenosis, with two episodes of respiratory and renal insufficiency, but with a good outcome. Probably his brother has suffered from childhood form of Pompe's disease.

Immunohistochemical detection of cyclin A in Wilms tumor

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PP

INTRODUCTION: The cyclins play an important role in the control of the cell cycle during cell proliferation and over-expression of the cyclins has been shown in many tumor types. Cyclin A is a late S cyclin and its abnormalities have been reported in several cancers. AIM: The aim of our study was to investigate cyclin A expression in Wilms tumor, to compare it with the expression in normal renal tissue as well as to see if there is a correlation between cyclin A expression in tumor with tumor stage, histologic type and prognostic group. MATERIAL AND METHOD: 28 cases of Wilms tumor and 2 samples of normal kidney tissue were studied using streptavidin-biotin-complex technique. Cyclin A expression levels were semiquantitatively scored. RESULTS: Focal expression of cyclin A was observed in epithelial cells of distal tubules in normal kidney tissue. The expression of cyclin A in Wilms tumors was higher compared to normal kidney tissue. The expression of cyclin A was observed in 12 of cases (42.9%), more often in blastemal than in epithelial component of Wilms tumor: 46.43% and 32.14 % respectively (p=0.218). There was statistically significant inverse relationship between cyclin A expression and tumor stage (p=0.045). Cyclin A was found less frequently in high risk tumors then in tumors with good prognosis (p=0.434). Expression of cyclin A was detected in various histologic types of Wilms tumor (p=0.698). CONCLUSION: Our results suggest that the expression of cyclin A is associated with tumor stage but not with prognostic group and histological type.

Immunohistochemical detection of alpha catenin in Wilms tumor

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PP

INTRODUCTION: The role of altered cell adhesion is critical for the development of cancers. E-cadherin plays an important role in the maintenance of cell-cell adhesion and its function is thought to be regulated by its associated cytoplasmic proteins, such as α-catenin and β-catenin. AIMS: We examined α-catenin expression in Wilms tumor and its relationship with histological type and stage of Wilms tumor. MATERIALS AND METHODS: α-catenin expression was assessed by immunohistochemical analysis. Correlation of semi quantitatively scored adhesion molecule levels with histological type and tumor stage was performed for 28 primary and 2 metastases of Wilms tumor. For statistic analysis we used Fisher, s exact test. RESULTS: Expression of α-catenin was reduced in Wilms tumor compared to normal kidney tissue ($p<0,05$). We detected α-catenin in 35% cases of Wilms tumor. Stage III displayed higher α-catenin levels than stage I/II, suggesting that impairment of their function might exist without actual loss from tumor cells. In blastemal component of Wilms tumor complet lost of α-catenin expression was observed. Epithelial and stromal component showed reduced immunoreactivity of α-catenin. Expression of α-catenin was completely lost in poor differentiated cells of epithelial component, while well differentiated cell showed decreased α-catenin expression compared to normal kidney tissue ($p<0,05$). CONCLUSION: Our results suggest that the α-catenin expression is reduced in Wilms tumor (especially in poor differentiated cells) and that implies reduced cell adhesion, which contributes enhanced tumor cell migration and proliferation.

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Effect of the peritoneal dialysis prescription on pentosidine in children

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PP

Enhanced formation of advanced glycation end products (AGEs) by peritoneal dialysate containing high dextrose concentrations has been implicated as a source of peritoneal membrane toxicity and loss of viability in patients treated with PD. The goal of this project was to elucidate the relationship between the structurally defined AGE pentosidine accumulation on peritoneal and plasma proteins and peritoneal membrane function, and to identify clinical factors leading to alterations in these parameters. The study comprised 27 pediatric patients (14 CAPD, 13 CCPD) on PD for a mean duration of 37.0±22.8 months (range, 1 to 120 months) and with a mean age of 13.3±4.4 years (range, 2.4 to 20 years). The pentosidine contents of plasma and peritoneal proteins were significantly lower in patients with residual renal function than in patients who were anuric (plasma pentosidine, 11.2±8.8 vs 24.1±16.6, p=0.02, respectively, peritoneal pentosidine 14.9±11.9 vs 31.1±3.7, p=0.01, respectively). There was no effect of treatment modality on plasma pentosidine (18.1±11.2; 18.8±19.3, CAPD vs CCPD, p>0.05) or peritoneal pentosidine content (24.1±14.1; 24.9±19.6, CAPD vs CCPD, p>0.05). There was no evidence that increased levels of pentosidine on peritoneal proteins reflect or affect peritoneal membrane function in these patients. Furthermore there was no effect of peritonitis on the pentosidine content of peritoneal proteins or peritoneal function as measured by PET. In conclusion, PD represents a well-tolerated therapy in children with no evidence that current practice causes changes in peritoneal membrane function, or in the peritoneal clearance of plasma or peritoneal proteins rich in pentosidine.

Lanthanum carbonate: a new phosphate binder

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OP

La2(CO3)3 has been proposed as a new phosphate binder with a high phosphate binding capacity (>97%) and low GI absorption. No serious toxic side effects have been reported so far. We have investigated the possible effect of La on bone in a rat model of chronic renal failure (CRF). In a multi-centre study, we compared the effects of La2(CO3)3 and CaCO3 on renal bone disease in dialysis patients. Male Wistar rats received La2(CO3)3 at doses of 100, 500 and 1000 mg/kg/day during 12 weeks. Animals with CRF induced by 5/6 nephrectomy as well as NRF animals were included. Bone histomorphometry showed that CRF animals receiving vehicle developed secondary hyperparathyroidism. La2(CO3)3 administration induced a dose-dependent decrease in bone formation rate and increase in osteoid area in CRF animals. Osteoblast perimeter however was not affected. Three out of 7 animals in the CRF-1000 group were classified as having a mineralisation defect. NRF animals showed normal bone histology in all groups. A dose-dependent decrease in phosphaturia was seen in the CRF groups, which was more pronounced as compared to NRF animals. La concentration in the femur was dose-dependently increased, with slightly higher concentrations in the CRF group than the NRF group. Bone La concentration did not correlate with histomorphometric bone parameters. All CRF groups showed significantly lower levels of 25 (OH) vit D3 when compared to NRF groups, but no effect of La-dose was seen. 1,25 (OH)2 vit D3 did not differ between groups. These results suggested that the observed effects on bone occurred secondary to a severe phosphate depletion induced by La2(CO3)3. In order to further substantiate this hypothesis, a second study was set up in which the effects of La2(CO3)3 where compared to those of sevelamer. Sevelamer is a non-metal-containing, non-absorbed phosphate binder, and thus expected not to have a direct effect on bone. CRF animals were treated with vehicle, 500 or 1000 mg/kg/day sevelamer, or 1000 mg/kg/day La2(CO3)3. Phosphaturia showed a clear decrease over time in all treatment groups, reaching statistical significance vs. vehicle after 2 weeks in the La2(CO3)3 dosed animals, and after 6 and 8 weeks in the high- and low-dose sevelamer groups. 25 (OH) vit D3 levels did not differ significantly between groups, whereas 1,25 (OH)2 vit D3 levels were significantly lower in the highest sevelamer dose group. Bone histology revealed a tendency towards increased osteoid area and decreased bone formation rate in all treatment groups. These data indicate that the effects of sevelamer on bone in CRF appear to be similar to those observed with high La2(CO3)3 doses. Further support for an indirect effect of La on bone was provided by the finding that non-dietary phosphate repletion reverses the effects of La2(CO3)3 on bone. Histomorphometric analysis of paired bone biopsies taken in 63 patients before enrolment in a dialysis treatment (baseline) and after 1 year of either La2(CO3)3 or CaCO3 treatment revealed almost no evolution towards low bone turnover (La: 4%; Ca: 26%), significantly less episodes of hypercalcaemia (La: 6%; Ca: 49%) and the absence of any alumin-

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ium-like effects on bone. These results suggest that the mineralisation defect observed with high doses of La2(CO3)3 occurs secondary to a severe phosphate depletion resulting from the potent pharmacological action of the phosphate binder, which is aggravated by the lower vit D levels in the context of the renal failure. This phosphate depletion is manifested by an almost absent phosphaturia (even with high PTH levels and in the presence of normal phosphataemia) and impaired bone mineralisation, whilst active osteoblasts are still present. A 1-year administration of La2(CO3)3 to dialysis patients resulted in an overall better outcome as compared to CaCO3.

MEFV gene mutations in children with familial mediterranean fever: Ege universty experience

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OP

OBJECTIVE: The aim of the study was to determine MEFV gene mutation distribution, allele frequencies in commonly mutated exons of gene and investigate clinically presentation of genotype in children with FMF in Agean region of Turkey. PATIENTS AND METHODS: 190 patients fulfilling the definite or probable FMF diagnosis and 111 asymptomatic relatives of patients were included the study. Genomic DNA's were obtained from peripheral blood samples of the subjects. MEFV genotyping from genomic DNA's were performed by direct DNA sequencing method for exons 2,3,5 and 10. RESULTS: MEFV gene mutation was found in 284 (47.2%) of 602 chromosome studied Homozygote or compound mutation was found in 71 (37.4%) and heterozygote mutation was found in 55 (28.9%) patients. The most common homozygote or compound heterozygote mutations were M694V in 29 (15.3%), M694V/M684I in 9 (4.7%), M694V/V726A in 6 (%3.2) and E148Q in 4 (2.1%) patients. The mutations were in exon 10 in 109 (86.5%) patients, exon 2 in 20 (15.9%), exon 3 in 4 (3.2%) and exon 5 in 2 (1.6%) patients. The allele frequencies for M694V, M680I, E148Q and V726A were 56.3%, 16.3%, 12.6% and 12.1% respectively. M694V allele was found statistically significant risk factor for developing renal amyloidosis (OR 3.79, 95% CI 1.23-11.6). MEFV mutation was found in 66 (59.5%) of the relatives. CONCLUSION: Molecular detection of MEFV gene mutations seems useful in confirming suspected cases and in detecting asymptomatic cases. M694V is the most common allele in FMF patients. M694V mutation is related with renal amyloidosis development.

Hypertension after renal transplantation

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PP

After renal transplantation nearly 80% patients developed hypertension as early complication. and 30% to 60% has hypertension as permanent problem. Various factors influence development of hypertension: own and donor kidney, duration of chemo dialysis, atherosclerosis, different diameter of donors and recipient blood vessels, immunosuppressive therapy and body weight. Cyclosporine treated patients developed hypertension as, different diameter of donors and recipient blood vessels, immunosuppressive therapy and body weight. Cyclosporine /CSA/ treated patients developed hypertension as permanent problem in 23,2%, with tacrolimus /TRL/ 15,7%. Hyperlipoproteinemia is presented during dialysis but is also presented after transplantation. 58,5% patients who were treated with Cyclosporine /CSA/ has it, and 20% treated with TRL. It is necessary to adjust immunosuppressive therapy according to clinical and immunological data. If the patients develop hypertension and hyperlipoproteinemia, immunosuppressive therapy should be changed. 72,3% patients in our study developed hypertension early. After one month mean systolic pressure was 179,8 mmHg, diastolic 112 mmHg. After 6 months mean systolic pressure was 165,8, diastolic 105. One year after the transplantation 53,6% patients had higher pressure, mean values 150,12/95,4 mmHg. Treatment of hypertension after transplantation leads to better viability of the graft and the patient.

Treatment of multiorgan disfunction with intermittent haemodialysis: is it metod of desperation?

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PP

Multiorgan disfunction (MOD) is defined as a presence of altered organ function in acutely ill patient such that homeostasis cannot be maintained without intervention. MOD is a final stage of systemic reaction caused by sepsis and it is an "immunologic dissonance". Theoretically, the perfect immunomodulating strategy should have influenced on circulating mediators (instead of acting their tissue levels) and this perfect strategy is heamofiltration. The aim: To answer the question: Why we use intermitent haemodialysis (IHD) instead of continuous renal replacement therapies (CRRT) regardless of their advantages? Assignments: To collate the effectiveness and costs of both methods (IHD and CRRT). Patients: 25 persons divided in two groups: 14 treated with

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CRRT and 11 treated with IHD. We trailed mean arterial pressure (MAP) during first 6 hours of each procedure to estimate haemodynamic stability. We also traced serum level of creatinin during all the treatment to assess the quality of renal replacement. We used short-term mortality and cost-effectiveness analysis to rate the efficacy and the expenditure of both methods. Results: 1/ MAP in the CRRT-grup was steadily during the procedures in contrast to MAP in IHD-group; 2/ The creatinin levels in both groups were similar; 3/ The short-term mortality in CRRT was 57.14% versus 81.6% in IHD; 4/ The cost was 648.36 leva per patients versus 332.18 leva per patient in IHD. Conclusions: We do not think IHD is a method of desperation. It is rather a desperate effort to manage the MOD. CRRT is more expensive, but much more effective and should be the reasonable method to manage the MOD.

Radionuclide methods for clearance determination in children on peritoneal dialysis

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PP

Radionuclide methods are widely used for clearance determination. The idea was to used these methods in children undergoing PD in order to simplified the cumbersome procedure for creatinine clearance with fluid collection. Six children aged 9.6 (6-14)years on PD were studied in hospital. Cr-51-EDTA (3MBq) and Tc-99m-DTPA (200 MBq) were injected simultaneously after the filling of peritoneal cavity with dialysate fluid. Blood samples were drawn at 4, 24, and 48 hours after injection. Samples of 2 ml plasma and standards were counted on scintillation counter. Peritoneal clearance was calculated taking the necessary data from the fitted monoexponential curve. There is high correlation between Cr-51-EDTA and Tc-99m-DTPA clearance (r=o,931) and between Cr-51-EDTA and creatinine clearance (r=0,916). Clearance was calculated with two plasma samples as well. High correlation was obtained (r=0,985, r=o,991, r=0,995) for any combination of two plasma samples, so the number of plasma samples could be reduced on two. We tried to obtain peritoneal clearance even using one plasma sample, with most appropriate time after 24 hours. CONCLUSION: The single injection radiotraser methods can be used for clearance determination in children od PD, as a simplified techniques.

The first and promising results of the treatment with colchicine in patients with systemic amyloidosis

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PP

The aim of the study is to evaluate the effect of the long term Colchicine treatment (two years) in patients (pts) with proven SA type A or L. Subjects and methods:12 pts, 7M and 5F, mean age 59.9+/-7.1 years were examined. All were with renal amyloid deposition as a single demonstration in renal tissue or in combination with primary glomerulonephritis, SLE or diabetic nephropathy, and 1 patient with thyroiditis.All pts were positive for amyloid, proven by renal biopsy, biopsy of subcutaneous abdominal fat. In one of them thyroid-gland biopsy was positive for amyloid. Patients with multiple myeloma and monoclonal gamapathy were exluded. All 12 pts were treated with Colchicine 0.5-1.0 mg/d during 24 months. Results: An insignificant increase mean average serum creatinin (Scr) was observed in 5 pts (from 172 mkmol/l to 220 mkmol/l). In 2 pts (16.6%) with severe amyloid deposition Scr increased significantly. In 4 pts (33.3%) Scr decreased significantly from 214.8 mkmol/l to 134 mkmol/l, ($p<0.01$). During period of 2 years only in 1 pts Scr remained normal. A significant fall of proteinuria was note in all 12 pts - from 4.32+/- 3.9 g/l to 2.11+/-1.7 g/l, ($p<0.001$). After the second year of follow up and treatment with Colchicine renal biopsy was performed in 4 pts and in 1 thyroid-gland biopsy. In all this biopsies we did not found amyloid deposition. The results of our study give hopes in preventing the amyloidosis deposition with long term Colchicine treatment.

Abdominal hernias in kidney insufficiency patients with continuous ambulatory peritoneal dialysis

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PP

INTRODUCTION. Terminal stage patients with kidney's insufficiency have the options of haemodialysis or continuous ambulatory peritoneal dialysis (CAPD). The sufficiency of peritoneal dialysis depends on the physical status of the peritoneum, as far as the exchange of the uremic toxins and peritoneal fluids is concerned. The presence of abdominal hernias creates pouches, whose difficulty in filling and emptying, during the peritoneal fluids' exchange, depends on the size of the hernias' sacs. The physical consequence of

the hernias in peritoneal dialysis patients is faster, as the hernias' sacks are being enormously enlarged in a very short time. On that background, given the continuous fluid exchange, the parietal peritoneum is getting thinner and, on later stage, occurs diffusion of peritoneal dialysis' fluids in the surrounding tissues. The surgical repair of these hernias must be performed in such a way that the peritoneal dialysis is not interrupted, as many of the patients do not have easy vascular access for haemodialysis. AIM. The aim of this retrospective study is to present the results of the surgical repair of abdominal hernias in peritoneal dialysis patients and the special character of the surgical techniques. PATIENTS AND METHODS. Our sample consists of 22 renal failure patients, 9 male and 13 female, age of 52±12 years, with operated abdominal hernias in the last 5 years. The kinds of hernias were: 8 inguinal (7 male, 1 female), 3 umblical (all female) and 11 post-operative abdominal hernias (2 male, 9 female). The hernias' repair was performed at the same time with the placing of peritoneal catheters in 4 inguinal hernias (all male), 2 umblical hernias (both female) and 9 post-operative abdominal hernias (1 male and 8 female). The rest were found and repaired after the placing of the peritoneal catheter, in time between 6 months up to 4 years. SURGICAL TECHNIQUE. As far as the surgical technique is concerned, there has been made a delicate dissection of the hernias' sac, the surrounding tissues, the muscular wall and the aponeuroses. The plastic construction of the hernia follows with mattress suturing, beginning with suturing of the hernias' sac, using thin continuous absorbable suture. In most of the patients a thin vacuum drain was placed. The peritoneal dialysis was repeated 24 hours after surgery. RESULTS. A slight leakage of peritoneal fluids was observed in the vacuum drain in 3 female with large post-operative abdominal hernias that were operated while the CAPD was functioning. This side effect was dealt with temporary interruption of the CAPD, heparinism of the catheter and haemodialysis for 3 to 5 days. Recurrence was observed in 2 women after the repair of the hernia, which were successfully reconstructed using the same technique after 7 and 11 months. In a male, 6 moths after the reconstruction of an inguinal hernia, which came up 3 years after the placing of a peritoneal catheter, a hydrocele was observed, that was surgically handled. CONCLUSION. We believe that the delicate dissection and the mattress suturing of the tissues during the repair of the hernias in CAPD patients prevent from post-operative side effects and recurrence. Furthermore, using this technique the CAPD is not interrupted, which is the main purpose for these patients.

Heterogeneity of bone mineral density changes in women with lupus glomerulonephritis

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PP

The aim of this study was to analyze the heterogeneity of bone mineral density (BMD) reduction across measurement sites in female lupus glomerulonephritis (LGN) patients on glucocorticoid treatment. The stusy population consisted of 32 women at a mean (SD) age of 43.2 (12.0) years, disease duration of 13.4 (6.2) years, treated with a mean cumulative prednisone dose of 34.4 g. The participants underwent a standardized interview, medical record review, blood sampling and BMD examination of the lumbar spine, femoral neck and distal forearm by dual-energy X-ray absorptiometry. They were supplemented with daily calcium (1200 mg) and vitamin D (500 UI). During the study mean daily glucocorticoid dose was 10 mg prednisone equivalent. BMD was re-examined at the end of the second year. At baseline twenty-two (68.7%) of the participants had osteoporosis at least at one major site. The BMD reduction was proportional to the trabecular bone content at the specific measurement site. Mean T-scores were the highest at the forearm (-1.03±1.13), followed by the hip (-1.32±1.26), AP spine (-1.87±1.46) and lateral spine (-2.90±1.50). Among the hip sub-regions the predominantly trabecular Ward's sub-region produced the lowest T-score values (-1.76±1.44). At follow-up greatest decline in BMD was seen at the trabecular-rich sites. Lateral spine bone mineral loss was 5.54% per year, whereas the total hip and the forearm lost 3.59% and 0.33% respectively. The heterogeneity of BMD reduction in our LGN population emphasizes the need for the targeted use of bone densitometry in steroid-treated patients. Attention should be paid to trabecular-rich sites, and fracture risk should be specifically determined.

Hyperphosphatemia appears infrequently in Balkan nephropathy hemodialysis patients

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PP

Despite numerous investigations in the last five decades Balkan endemic nephropathy (BEN) still presents provocative disease due to many unsolved problems. Maintenance hemodialysis (HD) enabled long life of BEN patients in ESRD but also contributed to better understanding of some features of the disease. Present study was undertaken with

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the aim to prove our empiric impression that hyperphosphatemia appeared rarely in BEN patients on HD. The study included two groups of patients: BEN group consisted of 21 patients (13 males, aged 63±8 yrs, dialyzed 8.1±2.9 yrs) and group of 20 patients with other renal diseases (14 males, aged 48±13 yrs, on HD 7.5±2.3 yrs). Retrospective analysis of medical records of examined patients for 2002 revealed that only 2 BEN patients but majority of patients with other renal diseases required phosphate binders therapy. Despite this difference BEN patients had lower mean serum phosphate levels than patients with other renal diseases (1.6±0.2 vs 1.8±0.2 mmol/l) and also lower mean alkaline phosphatase (127 vs 149 U/l) and PTH levels (294 vs 510 pg/ml). BEN patients had higher residual renal function and excreted averagely 2 mmol of phospahate daily. In conclusion, BEN patients on HD have normal phosphate levels that can be, at least partly, explained by their maintained residual renal function. It can be proposed that this feature of BEN had significant influence on the type of bone changes in BEN patients but also, according to our preliminary data, on more rare appearance of cardiovascular calcifications.

Living with new kidney: perceptions of recipients

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PP

Purpose:The aim of this study is to describe the perception of new kidney in adult kidney recipients. Method: Pnenomenological method was used. The study's purposive sample consisted of 40 kidney recipients who was monitoring outpatiently at Akdeniz University Organ Transplantation Unit. Participants were given four open ended questions and asked to describe their perceptions of new kidney by writing. Colaizzi's (1978) Constantly Compare Method was used for data analysis. Findings: Participants ages ranged from 18 to 56 years, %30 of participants were women, % 48 graduated from High School. Significant Statements about perceptions of their kidney were extracted and the meaning of each statement was formulated. Three themes emerged: "gratitudation", "responsibility accompanied by fear of loss" and "savior". Conclusions: Besides returning back to normal life, recipients always feel their new kidney's existence. At the same time, they experience intensive feeling of responsibility and fear of loss. According to the results, also physicial dimension of treatment, recipients should carefully be supperted emotionally by health care team, This approach is necessary for recipient adaptation to post transplantation period.

Dyspepsia, helicobacter pylori prevalance and gastroduodenal pathology in patients with chronic renal failure on regular hemodialysis

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PP

BACKGROUND: Gastroenteric symptoms in uremic patients are very frequent. In spite of hypergastrinaemia - a common finding in hemodialysis patients – some studies in which gastric acid output was measured have reported hyperchlorhydria, while others have yielded normal or low acid output. It seems likely that either chronic atrophic gastritis or parietall cell dysfunction in renal failure or the reduction of gastric juice ammonia by Helicobacter pylori (HP) with consecutive pH increasing might account for the restoration of hypergastrinaemia. Therefore the present study was conducted to consider the dyspeptic symptoms in regard to these mechanisms, to examine the HP prevalance and histopathological findings. METHODS: The study involved 22 hemodialyis patients (10 male, 12 female, mean age: 32±12,8) with upper gastrointestinal symptoms and 20 controls (12 male, 8 female; mean age: 43±11,8). Biopsy specimens were collected endoscopically. HP status was assesed by urease test and histology. Statistical differences were made using unpaired Student's t test. RESULTS: Histopathological examination showed atrophic corpus gastritis in 6 (27%) and antral gastritis in 16 (73%) patients. HP was detected in 8 patients (36%). In the control group 7 subjects had atrophic corpus gastritis (35%) and 13 subjects antral gastritis (65%). HP positivity was established in 11 of 20 controls (55%). HP colonization rate may be higher in patients with impaired renal function, especially in view of the high urea concentration in the gastric juice which might possibly be utilized by HP due to its high urease activity. However this is not supported by our observation nor that of others. In our study HP was observed in 36 % of dialysis group and 55 % of the controls ($p<0,05$). In spite of the hypergastrinaemia studies have reported that gatric pH values do not differ significantly among patients and healthy control groups. Chronic atrophic gastritis with decreased acid secretion might account for the high levels of serum gastrin. The incidence of antral gastritis (73%) and atrophic corpus gastritis (27%)in patients was comparable to the findings in controls (65 % and 35 % respectively). This indicate parietal cell dysfunction in renal failure which may even lead to hypoacidity.

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Esophageal dysmotility in patients with chronic renal failure

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PP

BACKGROUND: Gastrointestinal manifestations with structural and functional abnormalities are common in patients with chronic renal failure (CRF).Only little research has been done on gastrointestinal motor function in these patients. The purpose of our study was to investigate the motor function disorders of the esophagus in hemodialysis patients without symptoms. METHODS: We studied 15 hemodialysis patients (9 males, 6 females; mean age 32 ± 5,8). The control group consisted 12 subjects (7 males,5 females; mean age 38±2,7) with sustained esophageal symptoms and without any evidence of systemic, renal, hepatic and gastrointestinal disease. All the drugs, which potentially affect the esophagus were discontinued 3 days before the study. Esophageal peristaltism was evaluated by both wet and dry swallows, the mean amplitude of the pressure was recorded after 3 wet and 3 dry swallows. Upper (UES) and lower (LES) esophageal sphincter pressures were recorded.The biphasic or triphasic contractions were researched as the wave properties in patients. To evaluate autonomic function, tests concerning parasymphathetic nerve function and tests regarding sympathetic nerve function were performed. RESULTS AND CONCLUSION: There was no difference between the groups according to resting LES pressure and relaxation ($p>0,05$). The amplitude and duration of peristaltic contraction on wet and dry swallows at the proximal esophagus - striated muscle area – were smilar in the two groups.Contraction amplitudes in the CRF were higher than those in control group in the middle and distal esophagus ($p<0,05$). Triphasic tertiary and non peristaltic contractions were found less often in both patients and control subjects. Biphasic contractions, however, were recorded at a higher, statistically significant incidence in patients than in the controls (22 vs. 8 %, $p<0,05$). There was no differences concerning the esophageal disorders between patients with and without autonomic neuropathy. Therefore, we suggest that myopathy of the smooth muscle of the esophagus led to esophageal dysfunction. Based on our findings we can suppose that motor dysfunction is a frequent subclinical manifestation in patients with CRF and requires further detailed investigations.

Intradialytic variations of oxidative stress markers

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OP

Since hemodialysis (HD) could influence the oxidative processes in regard of both reactive species generation and antioxidant systems activity, we investigated the acute effects of HD procedure on the oxidative stress from chronic renal failure (CRF). Oxidative stress parameters were assessed at different moments (before: 0min, 40 minutes: 40min, and the end: 270min) during HD session in 12 CRF patients on maintenance HD. Plasma thiobarbituric acid reactive substances (TBARS), reactive dicarbonyl compounds (RDC), total plasma free thiols (Pt-SH), serum total antioxidant activity (TAA), non-protein erythrocyte thiols (E-SH), erythrocyte glutathione peroxidase (EGPx), catalase (CAT) and superoxid-dismutase (SOD) activities were determined spectrophotometrically. In order to correct for intradialytic plasma volume changes, ratios of parameters to hemoglobinaemia were analyzed.

Parameter	0min	40min	270min
TBARS/Hb	8.28±2.00	†12.46±3.00	†11.46±1.60
RDC/Hb	1.34±0.30	†1.08±0.14	†‡0.36±0.14
Pt-SH/Hb	1.20±0.23	1.22±0.18	1.18±0.16
TAA/Hb	0.13±0.02	0.12±0.02	†0.11±0.01
E-SH/Hb	0.86±0.27	0.82±0.20	†‡0.58±0.25
EGPx/Hb	0.38±0.05	0.41±0.05	0.37±0.09
CAT/Hb	22.81±5.60	15.67±13.0	17.27±4.90
SOD/Hb	37.00±5.60	33.58±6.50	33.16±10.3

$p<0.05$: †vs. 0min; ‡vs. 40min.

TBARS increased significantly over the first 40 minutes, plasma RDC decreased permanently, while antioxidant erythrocyte enzyme activities and Pt-SH did not shown notable intradialytic variations. E-SH and TAA were reduced at the end of HD session. These results point out the intradialytic removal of plasma RDC and sustain the acute effect of HD to enhance oxidative stress (indirectly argued by increment in TBARS, reduction of E-SH and TAA).

Frequency, treatment and prognosis of rapidly progressive glomerulonephritis in clinic of nephrology in Novi Sad

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PP

Rapidly progressive glomerulonephritis (RPGN) represents

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a clinical syndrome manifested by progressive renal failure with nephritic urinary sediment. We investigated frequency, treatment and prognosis of this disease in our community in previous 15 years. We followed the course of RPGN in 32 patients (18 women and 14 men). Our patients were 17 – 67 years old at the time of disease presentation (mean age 39,21). Serum creatinine concentration initially was above 300 μmol/l in 23, and bellow that range in 9 of our patients. Ultrasound guided renal biopsy was performed in all patients. Light microscopy findings show us a variable degree of extracapillary proliferation (25-100 % of analysed glomeruli) that is characteristic for crescentic glomerulonepritis. Immunofluorescent (IF) microscopy showed in ten patients pauci-immune GN, in 9 granular deposits while 6 patients had linear deposits of immunoglobulins and/or complement in glomerular structures. In 7 cases we did not have enough material for IF microscopy. Based on therapy regimes we divided our patiens in four groups (corticosteroids (CS) only (3 patients); CS + plasmapheresis + cyclophosphamid orally (19 patients); CS + cyclophosphamid orally (3 patients) and CS + cyclophosphamid intravenous pulses (7 patients). The kidney survival and also survival of the patients was best in the fourth group, where none of the patients was on renal replacement therapy, without lethal cases in this group.

Prognostic factors of renal survival in the elderly with deposition diseases (amyloisosis and monoclonal immunoglobulin deposition diseases)

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OP

Background. Amyloidosis and monoclonal immunoglobulin deposition diseases (MIDD) - light-chain (LCDD), heavy-chain (HCDD) and light-and-heavy-chain (LHCDD) are the diseases of the elderly with low prevalence. The aims of this study is to report the clinical features, pts survival and clinicopathological prognostic factors of renal survival in the elderly over 60 years of age with deposition diseases. Methods. Between January 1996 and December 2000, 191 pts over 60 years of age, underwent renal biopsy at our department. Twenty pts (8 men, 12 women; mean age 70,3±5,8 years; range 61-78 years) had diagnosis of amyloidosis (n=12) or MIDD (4 LCDD, 2 HCDD, 2 LHCDD) and were included in the study. They were followed until the end of January 2002. The end-point for renal survival study was end-stage renal failure requiring dialysis. At the time of renal biopsy different clinical data were evaluated: age, gender, clinical presentation, 24-hour proteinuria, serum creatinine, serum albumin, arterial hypertension (blood pressure of 140/90 mmHg or above). Clinical presentation and indication for renal biopsy were evaluated according to classical renal syndroms. Renal biopsy specimens were semiquantitatively analysed. Results. Indications for renal biopsy were acute renal failure (n=6) and nephrotic syndrom (n=14). Thirteen pts (65,0%) showed varying degrees of renal insufficiency (serum creatinin concentration ranging from 58 to 1370 μmol/l). One pt required dialysis at the time of renal biopsy. Eleven pts (55,0%) were hypertensive. All pts had proteinuria (ranging from 0,4 to 9,2 g/day). Serum and urine immunoelectrophoresis demonstrated the presence of monoclonal immunoglobulin in serum and urin (n=12), only in serum (n=2), only in urin (n=2), monoclonal imunoglobulin was not detected in three pts. During follow-up (16±12 months) 30,0% of the pts (6/20) developed end-stage renal disease. The actuarial renal survival rate was 85,7% at 12 months and 55,0% at 42 months. Serum creatinine of 300 μmol/l or above (h=2,2, risk=9,0, p=0,017) and hypoalbuminemia (b=7,3, risk=8,3, p=0,007) were important prognostic factors of renal survival during follow-up. Evaluated patohistological features were not important prognostic factor of renal failure. During follow-up 50,0% (10/20) of the pts died. Pts survival was 71,1% at 12 months and 36,6% at 42 months. Conclusion. In elderly patients MIDD presented with acute renal failure or nephrotic syndrom. The actuarial renal survival rate was 85,7% at 12 months and 55,0% at 42 months. Pts survival was 71,1% at 12 months and 36,6% at 42 months. Statistically significant risk factors for end stage renal disease were serum creatinine concentration of 300 μmol/l or above (p=0,017) and hypoalbuminemia (p=0,007) at the time of renal biopsy.

The futility of hemoperfusion and hemodialysis in amanita phalloides poisoning

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PP

Amanita phalloides poisoning is the most common cause of lethal mushroom poisonong. A specific antidote against the amanitin toxins is not available. General consensus exists regarding some treatments, such as the use of silibinin, penicillin, and activated charcoal. Because of the latency period in the development of symptoms, treatment should begin on the first suspicion that an intoxication is present. The most polarized debate concerns the value of extracorporeal elimination. We describe a case of 2 brothers with confirmed Amanita phalloides poisoning treated with hemoperfusion immediately after arrival at our hospital (72 h after ingestion). During the hemoperfuion treatment the both patients dies of acute renal failure. Clinical management of

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paients suffering from amanita phalloides poisonong reguires multi-disciplinary intervntion;therefore it is recommended to treat these patients in an Intesive Care Unit with specialized nephrological and toxicological consultancy, in colaboration with an organ transplantation team. Neither hemodialysis nor hemoperfusion contributed to the clearance of amatoxin.

Percutaneous transluminal angioplasty and venous stenting in hemodialysis patients with venous stenosis

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PP

In this study we present the short-term effect of percutaneous transluminal angioplasty (PTA) and venous stenting (VS) in the treatment of venous stenosis in hemodialysis patients. Twenty hemodialysis patients with findings indicating venous stenosis (arm edema and / or elevated venous pressure during hemodialysis sessions) were studied. Digital subtraction venography through the veins of the upper arm, revealed occlusion of the anonymous and / or subclavian veins in 3 patients, 80-90% stenosis of these veins in 7 patients, stenosis (80-95%) of the axillary vein in 5 patients, brachial vein stenosis in 3 patients and cephalic vein stenosis in three. In 5 patients more than one attempt of PTA and /or VS was done. Through the fistula veins (in 18 cases) and upper arm veins (in 2 cases) the following procedures were performed: PTA in 3 patients, PTA followed by implantation of a ballon – expandable stent in 5 patients, self – expandable stent implantation followed by PTA, throughout the stent, in 3 patients and balloon – expandable stent implantation in 9 patients. Stent implantation and PTA were successful in all cases, leading to a patency rate of the veins, from 80 to 90% in 5 patients and 90-100% in the rest. Findings of ipsilateral venous hypertension were resolved within a week. Conclusion: In hemodialysis patients, stent implantation with or without PTA seems to be an effective method for the correction of venous stenosis.

Two years of successful renal transplantation at the university center Iasi

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PP

Renal transplantation started in Iasi (4-th programme in Romania after Cluj, Bucuresti and Timisoara) in November 2000, when the first renal transplant from a live donor was realized. Since then 26 renal transplants were successfully performed in our center: M/F=14/12, 14 previously on HD, 10 on CAPD and 2 pre-emptive, patients mean age = 29± 25 (15-41) years, donors mean age = 53±9 years. Immunosuppressive therapy associated induction with monoclonal antibodies antiTac, cyclosporine, MMF 2g/day and prednisone. A urologist –vascular surgeon team, performed all transplant operations. There were no important complications during operation or after and no cases of DGF. Eight patients (30,7%) presented corticosteroid-responsive acute rejection episodes. Mean serum creatinine were: 1,7 mg/dL at 1 month, 1,5 mg/dL at 6 months, 1,5mg/dL at 1 year. As complications of the immunosuppressive regimens there were 5 cases of secondary diabetes due to corticosteroids, 1 case of peptic ulcer, and minor digestive complaints reversible after reducing doses of MMF. CsA toxicity was seen initially in more then 50% of patients, but the prevalence dropped after C2 levels testing was introduced routinely. Patient and graft survival was 100% at 6,12, 24 months. Our data demonstrate a successful initiation of a renal transplant programme in the fourth center in Romania.

Intravenous vs subcutaneous epo administration as maintenance therapy in haemodialysis patients: a prospective randomized trial

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OP

Similar hemoglobin (Hb) levels can be obtained using lower doses of s.c. EPO as compared to the i.v. administration route. An increasing number of aplastic anaemia cases have been reported only in patients treated by s.c. EPO. Little is however known about the most efficient administration route once that the target Hb level is reached and stable. In a prospective randomized trial we compared s.c. vs i.v. EPREXTM, as maintenance treatment for anemia in stable HD patients. Inclusion criteria: HD patients with Hb levels > 11 g/dL for the last 3 months, without any change in the weekly EPREXTM dose and S-ferritin levels 200-500 mg/L and TSAT > 20%. 20 patients were randomized to Epo s.c. for 8 weeks, and than were switched to i.v. Epo during another 8 weeks, maintaining the pre-study dose, while 20 were randomized to i.v. Epo, and after 8 weeks switched to Epo s.c., similarly maintaining the same weekly pre-study dose.

Results:	Hb initial	Hb+8w post-s.c.	Hb+8w, post-iv	P
s.c.-i.v. study	12.4	12.44	12.45	NS
i.v-s.c. study	12.06	11.70	11.79	NS

In iron-repleted HD patients, with stable Hb > 11 g/dL, changing the EPO administration route from s.c. to i.v.,

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without any modification in the weekly dose, does not have a significant impact on Hb levels, over a period of eight weeks. This prospective evidence challenges the current guidelines suggesting a pre-eminence of the s.c. route based on lower required doses.

Balkan endemic nephropathy: yesterday, today, tomorrow

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PP

Balkan Endemic Nephropathy (BEN) has been a very serious health hazard in some countries in the Balkans for half a century. Much effort has been done for the last ten years to clear up numerous problems related to this disease. However, the most important of them still remain in the dark: etiology, pathogenesis, specific functional failure and morphological substrate, as well as the nature of its relation to the urothelium tumours. The last ten years, handicapped by war and crises of all sorts, were characterized by a total absence of comprehensive and broad clinical research efforts and local investigations in the areas affected by BEN concerning this disease. Sporadic papers dealing with BEN are mainly based on clinical observations of its mildly descending incidence and prevalence. For this reason BEN is today still a mystery, as it was half a century ago. Future research of BEN etiology should be focused on the hypotheses which have proved most plausible, i.e. on the role of genetic factors, mycotoxins, viruses and the environmental factors in increased or decreased concentration in drinking water. It is also necessary to deal with the issue of diagnosing the disease, i.e. searching for a specific functional test or morphological substrate, which would allow early diagnostics and treatment. The problems of urothelium tumours should be investigated along with the BEN research, from the standpoint of possible common etiopathogenesis. The descending tendency in the last ten years is a reason for optimism, but it should not deceive or discourage the researchers because it may only be a lull before a storm.

Permanent dialysis access placement for quality life and survival of patients on chronic hemodialysis

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PP

The morbidity and mortality of dialysis patients remained high, 5-fold than general population. The important factors to improve the outcome of dialysis patients are timely referral and placed permanent dialysis access in pre-end-stage renal disease (pre-ESRD). The purpose of this study was to determine factors associated with timely referral to pre-dialysis program and impact of pre-ESRD permanent access placement to morbidity, mortality and short-term outcome. A retrospective study of adults patients who began chronic hemodialysis programe at our Center for hemodialysis, General Hospital Leskovac was performed, for five years (1996-2001) period. These 147 patients were divided into three groups: those who had an attempt at pre-ESRD permanent access placement (1), those who had pre-ESRD permanent access placement (2) and those who had not pre-ESRD permanent access placement (3). Individual patient characteristics, clinic features and visits, (co)morbidity and mortality, short-term outcome were analyzed. There does not find any specific patients demographic associated ith a lower placement of pre-ESRD permanent access; 1-st and 3-rd group comparing to 2-nd group had late referral ($p<0.01$) and smaller number of clinic visits ($p<0.01$), higher morbidity ($p<0.03$) and shorter two-years outcome ($p<0.05$); 1-st group comparing to 2-nd and 3-rd group had higher comorbidity prior starting chronic hemodialysis ($p<0.01$). The results confirm that timely referral and opportuned pre-ESRD permanent access placement have beneficial effects on better quality life and longer survival chronic hemodialyzed patients and emphasize importance of treatment of associated diseases, particularly diabetes and hypertension in pre-ESRD.

Von Willebrand factor related to different hemodialysis membranes

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OP

Haemostatic imbalance is well known in hemodialysis (HD) patients. The aim of this study was to examine the biological activity of von Willebrand factor (vWf) related to different HD membranes. The number of 104 patients going on well-balanced HD were divided in 4 groups: I-cuprophan (n=30); II-polymetilmetacrilat (PMMA) (n=30); III-hemophan (n=24); IV-polysulphon (n=30). The vWf biological activity was measured before and after HD session concerning platelet aggregation. VWf biological activity increased: in I-st group from 132±47% to 157±42% ($p<0.05$); in II-nd group from 128±32% to 234±28% ($p<0.001$); in III-rd group from 128±24% to 150±25% ($p<0.01$); and no statistical significance was found in the IV-th group. Due to obtained results we can conclude that the polysulphon membrane doesn't affect the vWf biological activity, and hemostasis, respectively, that contribute this membrane to become a membrane of choice

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Changes in LDL, HDL cholesterol and lipid peroxidation in IgA nephropathy after antioxidant treatment

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PP

The aim of the study was to investigate the status of LDL, HDL cholesterol and circulating lipid peroxidation after antioxidant therapy by combination of 10 mg beta carotene, 40 mg Vitamin E, 100 mg Vitamin C and 50 µg Selenium (Triovit). Twenty-five patients with biopsy proven IgA nephritis received that drug one capsule daily as dietary supplement for 3 months. At the start and at the end of the study were provided routine laboratory examinations including also cholesterol, triglycerides, HDL and LDL cholesterol. Lipid peroxidation was established by thiobarbituric acid reactive substances (TBARS) and oxidative modification of HDL (HDL TBARS) and LDL (LDL TBARS). Levels of TBARS and LDL TBARS increased in whole group and levels of HDL TBARS decreased. TBARS decreased in 7 (28%) pts and LDL TBARS decreased in 5 pts (20%). HDL cholesterol was lower than normal range in 17 pts and it increased in 8 pts (47%). LDL was higher in 10 pts and its level decreased in 6 pts (60%). No correlation was observed between morphological changes and lipid peroxidation. Positive correlation was established between TBARS and LDL TBARS. Because of many factors that can affect free radicals production the value of examination of total lipid peroxidation appears to be limited. Our data suggest that antioxidant treatment does not changes significantly levels of TBARS and LDL TBARS, but modulates pathological changed HDL and LDL cholesterol in part of the pattents with IgA nephropathy.

Monitoring of cyclosporine A in non-transplanted patients with glomerulonephritis

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PP

Immunosuppressive effect of Cyclosporine A (CyA) is maximal and most consistent around the peak absorption time that is within the firs 1,5 to2,5 hours postdose. The aim of the study was to compare monitoring of Co and C2 for optimal therapeutic management of 12 patients with severe primary and secondary glomerulonephritis. Whole blood levels were measured 5 minutes before and 2 hours post dose of CyA. Drug levels were checked more than one so 53 pairs of Co and C2 were included in the study. The target levels of the drug were Co 75-150µg/l and C2 600-1200 µg/l. Mean dose was 79,62+/-24,93mg. Mean Co was 94,74+/-38,99µg/l and C2 was 743,47+/-261,47µg/l. Among all pairs 29 (54,72%) were in optimal range, 6 pairs (11,32%) were lower, 1 was with higher levels. In 3 patients C2 was higher with corresponding normal Co. Eight C2 were lower with normal Co in 5 and with higher Co in 2 of them. There were no difference in renal function or other drug-related adverse effects between Co and C2. Adequate and consistent absorption of CyA is critical for optimal outcome. We suspect that C2 monitoring is optimal not only for patients with kidney and liver transplantation, but also for non-transplanted patients with severe glomerulonephritis

HCV infection acquired after renal transplantation: a progressive disease

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OP

The aim of this study was to evaluate the natural course of HCV infection acquired after renal transplantation (RT). Patients and Methods: 17 RT pts had evidence of acquisition of HCV infection after RT [seroconversion or acute hepatitis (AH) at liver biopsy (LB)]. They were followed up for 7.2 (4.2) years after RT and underwent more than 1 consecutive LBs. Results: 4 pts developed fibrosing cholestatic hepatitis (FCH) 9.0 (4.7) months post RT. A cholestatic syndrome with bile duct damage presented in 6 pts (4 as progression from CH) 57.5 (33.5) months post RT; later than the FCH pts (p=0.02), ending up to vanishing bile duct syndrome (VBDS) in 3 of them. CH was observed in 7 pts (3 as progression from AH), showing yearly progression rate of fibrosis 0.76 per year (ratio between the fibrosing scores difference at two consecutive LBs in METAVIR units divided by the interval time). 6 out of 17 pts died in a median (IQR) of 6.1 (1.5, 7.1) years post RT, 4/6 due to hepatic failure (2 FCH, 1 VBDS, 1CH). Graft failure occurred in 6/17 pts (1 FCH, 2 VBDS, 3 CH) 5.9(2.0) years, post RT. Genotype 1 was found in 7/9 (78%) of the FCH or VBDS pts and in 2/7 (29%) of CH pts (p=0.05). HCV-RNA levels of FCH pts were 1 log10 higher (p=0.06). Conclusions: HCV infection acquired after RT is frequently associated with a highly progressive course. Cholestatic syndromes present major complications manifesting as FCH in early and VBDS in late post RT period.

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Is atherosclerosis risk lower at CAPD patients

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PP

Aim: It is well known that morbidity and mortality increased at dialysis patients. We compared CAPD and HD patients for cardiovasculer disease (CVD) risk factors and increased mean carotid artery intima media tickness (MCIMT) that results early atherosclerosis. Method: 25 HD patients (12 M,13 F, mean age 42.3±11.4 year,dialysis time 32.6±19.5 month) and 28 CAPD patients (10 M,18 F, mean age 41.8±9.5 year,dialysis time 25.5±22.1 month). All patients bilateral carotid arteries examined by B mode ultrasonography and measured MCIMT. Patients with diabetes mellitus and more than 10 years undergo dialysis excluded. Both groups compaired for the CVD risk factors as age, sex, dialysis time, blood pressure, pulse pressure, left ventricul mass index, albumin, homocystein, lipid levels, MCIMT, presence of carotid artery plaques, smoking and presence of Aterosclerotic heart diseases. In addition the correlation investigated by Pearson correlation test between MCIMT and age, sex, dialysis time, blood pressure, pulse pressure, left ventricul mass index, albumin, homocystein, lipid levels. Results: Both groups are similar for age, dialysis time, % men patient ratio, Body mass index, midarm musclecycle, left ventricul mass index and presence of carotid artery plaques. At HD patients homocystein level and MCIMT are higher when compaired with CAPD patients.(in order p=0.012 and p=0.011). But at CAPD patients plasma total cholesterol and triglycerid levels are higher than HD patients. (in order p=0.001 and p=0.008) There is a positive correlation between MCIMT and homocystein level at HD patients (p=0.001,r= 0.677) but not yet at CAPD patients. We don't found any correlation between MCIMT and other parameters. Conclusiin: At CAPD patients MCIMT ; early sign of atherosclerosis and homocystein level are lower. CAPD may be more advantageous and defender for atherosclerosis with renal replasman therapy patients.

Parameters	HD patients (n=25)	CAPD patients (n=28)	P
Albumin (g/dl)	4.0±0.5	3.97±0.4	NS
Cholestero l(mg/dl)	159.3±50.6	213.7±37.0	0,0001
TrygliceridеS (mg/dl)	159.4±78.7	251.6±135.0	0,008
Mean IMT (mm)	1.17±0.15	1.06±0.13	0,011
Homocystein	31.2±35.8	18.3±6.5	0,012
CVD ratio (%)	4 (%16)	2 (%7)	NS
Smoker ratio (%)	6 (%24)	5 (%18)	NS

Sudies on the level of some cytokines in patients with hypertension of pregnancy

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PP

Hypertensive diseases of pregnancy are the most common complications during pregnancy. They are of major importance for the health of the mother and of the newborn. A widely spread hypothesis about the pathogenesis of preeclampsia is the disturbed immune adaptation. It is believed that the normal pregnancy coincides with alterations in two separate, mutually suppressing themselves populations of T-helper cells, with switching from Th1 (cell-madiated) to Th2 (associated with the antibody response). Aim of the study: To investigate the intracellular expression of T-helper 1 (Th1) and T-helper 2 (Th2) cytokines in T lymphocytes from peripheral blood of patients with preeclampsia and women with uncomplicated pregnancy. Material and methods: Blood samples were taken from 20 patients with preeclampsia and 24 healthy pregnant women. The intracellular expressions of Th1 cells, producing interleukin-2, tumor necrosis factor (TNF-α) and Th2 cells, producing interleukin 6 and interleukin-10 were determined using a flow-cytometric method. Results: We found, that in the group of patients with preeclampsia the expressions of Th1 cytokine – interleukin-2 (Il-2) in TCD4 lymphocytes (x=30.83±8.68) were significantly higher, compared with the group of healthy pregnant women, in whom they reached to x=5.025±2.43, p<0.005. The expression of interleukin-10 in TCD4+ lymphocytes were lower in patients with preeclampsia, compared with healthy pregnant women (IL-10 - 3.15±1.70 versus 7.92±2.69, p<0.05). Expressions of interleukin-6 in pregnant women with preeclampsia were x=5.09±2.0 versus x=1.34±0.9 in the healthy (p<0.05). The TNF-α expressions in pregnant with preeclampsia were higher (x=11.93±3.22), compared with the healthy pregnant women (x=5.438±2.12) - p<0.05. Conclusion: These results suggest that in preeclampsia a T helper-1/T helper-2 disbalance is present, with prevailing T-helper-1 immunity, which is manifested by increased expression of IL-2, IL-6 and TNF-α and decreased expression of interleukin-10, produced by T-helper-2.

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Comparison of peritonitis episodes with staphylococcus oxacillin resistant or susceptible

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PP

Peritonitis and especially the growth of resistant Staph species remains the main cause for CAPD drop-out. The existence of parameters and indicative of patients at high risk to develop peritonitis with oxacillin resistant staph (ORS) could be helpful. We studied resprospectively peritonitis episodes from 1/1997 to 12/2002. We estimated peritonitis frequency and patients' characteristics developing Staph positive peritonitis resistant (ORS) or susceptible (OSS) to Oxacillin. From a total of 51 patients on CAPD 45 (88,2%) had 136 peritonitis episodes (1/11.9 o.pts). From 116 positive cultures Staph species were isolated in 72 (62%) and 44 (38%) other microorganisms. The species were Epidermidis 43%, Warneri 15.3%, Simulans 13%, Aureus 5% and other 22%. Among the 72 Staph species 33 (45.7%) were ORS and 39 (54,2%) OSS. From the 35 patients with Staph positive cultures 21 (Group A) had ORS and 14 (Group B) OSS. Patients of Gr. A were older ($p<0.05$). Peritonitis rate from CAPD starting to the first positive episode of Staph (+) in each group was higher in Gr. A (1/20.2 mo.pts vs 1/29.3 mo.pts of Gr. B ($p<0.05$). During the studied period patients of Gr. B had greater peritonitis rate than those of Gr.A (1/14.5 vs 1/19.4 mo.pts respectively, $p<0.05$). The two groups of patients had no differences on Kt/V, serum albumin and residual renal function, both during at the start and the end of the studied period. From our data it can be suggested that older patients with higher frequency of peritonitis episodes are more prone to develop ORS. Clearance adequacy, nutrition status and residual renal function don't seem to play any role.

Analysis of haemodialysis adequacy at patients treated at our department

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PP

This analysis was made with mathematical assembly, using the formula Kt/V, individually for every patient at our department, associated with passing time (years) on HD and the age of patients who are on chronic haemodialysis programme. According to the years on HD, we divided the patients on 4 groups: 0-5 years: average of Kt/V: 1,24; 5-10 years: average of Kt/V: 1,1; 10-15 years: average of Kt/V: 1,15; over 15 years: average of Kt/V: 1,21; There is no significant differences of the value of Kt/V in this groups. According to the age of the patients, we divided them in 6 groups: 20-30 years: average of Kt/V: 1,28; 30-40 years: average of Kt/V: 1,25; 40-50 years: average of Kt/V: 1,19; 50-60 years: average of Kt/V: 1,17; 60-70 years: average of Kt/V: 1,05; over 70 years: average of Kt/V: 0,96. Our analysis shows that the older patients have lower adequacy of HD.

Balkan endemic nephropathy in Bulgaria

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OP

In order to establish the current frequency of Balkan endemic nephropathy (BEN) in Bulgaria, a total of 3634 individuals, inhabitancies of the 13 most affected endemic villages, were screened for BEN during the period 1999-2003. In the present study 131 cases with BEN (3.6% from the total number of screened individuals) were found. The frequency of the disease reached the value of 10.5% in certain villages. A high predominance of affected women – 114 (87%) compared to man was observed. Most individuals were between 60 and 80 years of age, all being older then 51. Eleven of the patients (8.4%) showed history of uroepithelial tract tumors. In conclusion, it was observed reduced incidence of BEN in Bulgaria compared to the apidemiological data of 30-40 years ago. In certain villages the disease frequency decreased 5 times. No cases younger then 51 years of age were established. The possible reasons for reduction of BE frequency are discussed.

Home hemodialysis: Belgrade shows the way

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OP

During the past decades it has been confirmed that home hemodialysis (HOHD) offers some advantages as compared to hospital hemodialysis (HSHD). History of home hemodialysis in Serbia dates from 1971 year and 126 patients were treated by this dialysis modality in period 1971-2002. The result of treatment were presented and compared with those of patients on hospital HD. The most frequent reason for ESRD was glomerulonephritis (HOHD) and vascular diseases (HSHD); diabetes was more frequent among patients on HSHD (9.5% vs. 2.1%). Patients were treated by acetate hemodialysis (HOHD vs. HSHD=0:12.5%), low-flux membranes (HOHD vs. HSHD=0:27.2%), high-flux membranes (HOHD vs. HSHD=87.1:50.2%) and HDF (HOHD vs. HSHD=12.9:10.1). Dialysis time per session is 75-90 h (HOHD) and 52 h (HSHD). There was no difference in hepatitis prevalence between patients (anti HCV: 27.2 vs.

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27%; HbsAg: 3.6% vs. 9%). Patients on HOHD had better Hb level (10.5 g/dl vs. 8.5 g/dl); 31% of them were on EPO as compared with HSHD patients (only 13%). Ferritin level was: 640+696 ug/l (HOHD) and 707+583 ug/l (HSHD), ALP: 79.2+33.2 (HOHD) and 181+162 IU (HSHD), PTH: 379+236 (HHD) vs. 601+64 pmol/l (HSHD). Parathyroidectomy was performed in 20% of patients (HOHD=HSHD). About 22% (HOHD) and 8% (HSHD) of patients had PTH <ULN. Hospitalisation was 1/10 patientyears (HOHD) and 1/3 patientyears (HSHD). Kaplan-Mayer survival curve revealed better survival for those on HOHD. Those patients had better overall rehabilitation. About 27% of patients on HSHD are interested in HOHD if available. Overall conclusion is that home hemodialysis offers significantly better results of treatment as compared with hospital hemodialysis.

Does dialysis membrane influence CRP level during hemodialysis?

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PP

Inflammation, malnutrition and atherosclerosis are the most important cause of Mb and Mt in dialysis patients. Among different mechanisms, dialysis membrane has been proposed to have pro-inflammatory properties. The aim of this multicenter study was to evaluate the markers of acute inflammation in 63 patients during dialysis on cuprophan (CU), hemophan (HF) and polysulphone (PS) membranes. First month, patients were dialyzed on CU (No=33) or HF (No=30) membrane. Second month, patients either continued dialysis treatment on the same membrane (CU or HF) or switched on PS membrane. There were no significant differences between groups according to age, gender, duration of dialysis and underlying renal disease. Descriptive statistics, the Mann-Whitney test, the Two-Sample Kolmogorov-Smirnov Test, the Pearson Chi square Test, the Kruskall Wallis Test and Fisher's Exact Test were used for statistical analysis. CU membrane: LE decreased after 60' of dialysis ($p<0.001$), ESR and CRP increased ($p<0.009$ and $p<0.01$). At the end of HD, LE number increased vs. 60' ($p<0.001$), ESR increased vs. start ($p<0.006$) and 60' ($p<0.0001$), Plt number increased vs. 60' ($p< 0.003$), fibrinogen increased vs. start ($p<0.02$) and 60; ($p<0.001$) and CRP increased vs. start (0.001) and 60' (0.001). HF membrane: LE decreased ($p< 0.001$) after 60' of HD. At the end of the HD session, LE number increased ($p< 0.001$) vs. 60', Plt number increased vs. start ($p<0.002$) and 60' ($p< 0.001$) and CRP increased vs. start ($p< 0.002$) and 60' ($p< 0.001$). Similar changes were observed after second month of dialysis on CU and HF membrane. PS membrane: ESR and LE number increased at the end of HD vs. start ($p<0.009$). Plt number and CRP increased vs. 60' ($p<0.001$), Kt/V increased vs. CU ($p< 0.004$) and HF ($p< 0.01$) membrane. Number of intradyaltic symptoms did not differ significantly during HD on CU, HF and PS membrane. In conclusion, CU membrane had the highest and PS the lowest pro-inflammatory properties but without acute clinical significance.

Nephrotic syndrome in a child with a Wiskott Aldrich syndrome

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PP

Wiskott Aldrich syndrome is a rare disease of immunodeficiency which is transmited by X chromosom. It is characterized by thrombocytopnia, recurrent infections and eczema. The occurance of in this disease is not often. The limited number of renal biopsies had shown different histological pictures, wich is presented in a form of IgA nephropathy, mesangioproliferative GN, membranoproliferative GN and interstitial nephritis. In this work we present the 15 year old boy with Wiskott Aldrich syndrome. This year, for the firs time the disease was asociated with the signs of nephropathy, and the clinical picture of nephrotic syndrome. The proteinuria was of the nephrotic type and ranged up to 19 g/day, with the decrease of serum proteins on 35g/l, and hyperlipidemia.The arterial pressure and the kidney is transmited by X chromosom. It is characterized by thrombocytopenia, recurrent infections and eczema. The occurance of nephropathy in this disease is not often. The limited number of renal biopsies had shown different histological pictures, which is presented in a form of IgA nephropathy, mesangioproliferative GN, membranoproliferative GN and interstitial nephritis. In this work we present the 15 year old boy with Wiskott Aldrich syndrome. This year, for the first time the disease was asociated with the signs of function were normal. The values of IgG, and IgM were dicreased, but IgA was sligthly in rise. C3 and C4 were in the acceptable limits and ANA negative.The renal biopsy was not done due to low values of trombocites. The therapy began with 3 boluses of methylprednisolone (750 mg/day i.v. for 3 consecutive days), and was continued with oral prednisolone (80 mg/day in 3 dosis, 4 weeks). The proteinuria was negative in 3 weeks. The dosage of prednisolone was dicreased after 4 weeks on 1 mg/kg every second day during the following l months. The boy is currently in complete clinical and biochemical remission. In our pacient the clinical picture, biochemical paramethars of disease, the good response to steroid therapy and clinical course, were similer to nephrotic syndrome with minimal changes, but the patohistological confirmation of this assumption we dont have.

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Diabetic nephropathy: ultrasound and doppler changes

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PP

Diabetic nephropathy (DN) develops in about 40% of the patients with insulin-dependent diabetes (IDD) and in 30-35% of these with non-insulin-dependent diabetes (NIDD). Organ hypoxia resulting from the vascular changes is the major pathogenic factor extending the progression of diabetic complications. In this study we compare the diagnostic potential of conventional (CU) and Doppler (DU) ultrasound in the evaluation of DN. We investigated 44 diabetic patients (15 male and 29 female, mean age 51+/-16.3 years, 24 had IDD and 20 had NIDD) and a control group of 20 healthy non-proteinuric volunteers (10 male and 10 female). Following parameters were evaluated: BUN, Ccr, total serum protein and albumin levels, proteinuria. We measured renal volumes, thickness and echogenicity of parenchyma (CU), and Doppler indices and mean RI (DU). CU was performed with 3.5-5 MHz transducer, CFM Doppler – with frequency 2.8-5.6 MHz. All diabetic patients had proteinuria ranging from 0.300 to 10.0 g/24 h. Sixteen of 44 diabetic patients (36%) had increased renal volumes. Five of them had NIDD, 5 had grade I or II chronic renal failure (CRF). Parenchymal echogenicity was increased in 42/44 diabetic patients. Twenty of them(45%) had I grade echogenicity, 15 (34%) – II grade, 7(16%) – III grade. PI and RI of the diabetic patients were significantly higher than in the control group (T-criterion, $p<0.02$). There was significant positive correlation between the serum creatinine levels and Doppler indices ($p=0.019$, $R=0.75 – 0.78$). Renal volumes and thickness of the parenchyma of IDD patients were higher than those of NIDD patients (non-significant, $p>0.05$). We found similar differences for the Doppler indices (PI, RI). The combination of increased renal sizes, higher parenchymal echogenicity and increased Doppler indices are typical ultrasound characteristics of both IDD and NIDD patients. There are no typical ultrasound criteria for the differentiation between the two groups. An exact performance of a Triplex ultrasound in the context of the laboratory data takes an important place in the early diagnosis of DN as does the evaluation of intrarenal haemodynamics by Doppler ultrasound.

Tubulointerstitial injury in glomerulonephritis: causes and consequences

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OP

Tubulointerstitial (TI) injury is recognized as an important prognostic factor of chronic renal diseases including primary glomerulonephritis. Our retrospective studies of the factors influencing the course of idiopathic focal-segmental glomerulosclerosis in 53 patients and membranous nephropathy in 71 patients confirmed that the presence of interstitial fibrosis and tubular atrophy at the time of biopsy is associated with increased risk of ESRD and death. Besides, in experimental model of adriamycin nephropathy in spontaneously hypertensive rats TI changes were found as the unfavorable factor of prognosis. Mechanisms involved in development of TI injury in different renal disease are the subject of numerous studies summarized here. Different factors (proteinuria, ischemia) may induce interstitial inflammation characterized by infiltration of different cells and proliferation of interstitial fibroblasts. Tubular cells may also transdifferentiate to fibroblasts. An increased synthesis of extracellular matrix by tubular cells and fibroblast as well as decreased local turnover of matrix components lead to development of TI fibrosis. Many of these processes are mediated by cytokines, chemokines and growth factors, which appear due to increased local release, increased filtration and delivering from glomeruli after their immune and non-immune injury. The specific therapy to control the progression of TI injuries is unknown. Better understanding of mechanisms involved in their development may help in definition of effective measures for prevention and treatment of TI injury and chronic renal diseases progression.

Radiocontrast induced nephropathy

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PP

Hospital-aquired acute renal failure increased in the last years from about 5 to 6,4 %, while mortality remained high and according to newest investigations it is about 60% on average. Radiocontrast-induced nephropathy is the third-cause of death in hospital-aquired acute renal failure. Risk factors for radiocontrast-induced nephropathy include: the existing kidney disease, diabetes, dehydratation, multiple myeloma, older age and earlier kidney damage by contrast substances. The clinical course of radiocontrast-induced

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nephropathy may manifest from asymptomatic picture to development of oliguric form of acute renal failure. Modalities of prevention ant tretment of radiocontrast-induced nephropathy are as follows: adequate hydration of patinets, appropriate of diuretics, calcium channel blockers nonionizing radiocontrast and preventive haemodyalisis. Experimetal studies inidcate application of atrial natiruretic peptide, endothelin, prostaglandin. Two patients treated at the Clinic for Nephrology and Clinical Immunology in Novi Sad, presented with radiocontrast-induced nephropathy. In one patient it appeared after panaortography and in the second after computerized tomography of the abdomen. In both cases aggravation accured due to already existing renal failure caused by radiocontrast substances. The problem is particularly important because there is a large number of patients in whome there is a risk of ardiocontrast-induced nephropathy and it is necessary to carry out adequate prophylaxis and accurate assessment of kidney function before application of radiocontrast substances.

Tubulointerstitial dysfunction in early post-transplant period

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PP

Dysfunction of a transplanted kidney may occur in any post-transplant period. The aim of this study is to differentiate between levels of early dysfunction of a trenaplnted kidney. Research comprised 45 monitored renal transplant patients classified in groups according to hospitalization period and renal complications: group I (to 15 days without complications); group II (to 15 days with complications); group III (to 30 days); group IV (to 60 days). The control group consisted of monitored patients who have undergone abdominal sourgery but without derangements of their uropoetic system. The next parameters have been followed up in each patient during the first month after tarnasplantation almost daily: creatinine clearance, serum creatinine, urea, natriurezis, diurezis, proteinuria (24 hours), urine osmolality. Statistical analysis of given parameters has shown distinct levels of renal dysfunction: control group – circulatorial form of tubular dysfunction without azothemia; group I – mild polyuric form of ATL (acute tubular lesion), groups II and III – pronounced or moderate polyuric form of ATL, resp.; group IV – severe polyuric form of ATN (acute tubular necrosis). The most important of the evaluated indicators of renal function wich have to be included in the diagnostic algorhythm of patients with kidney transplantation and patients with other renal dysfunction are: creatinine clearance, serum creatinine, natriuresis, 24 h diuresis and urine osmolality. Concentration of serum urea has shown to be completely unreliable indicator of renal function, especially in early transplant period.

Ten-year survival of the patients with lupus nephritis treated with combine pathogenetic therapy

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OP

The aim of the study was to evaluate the ten-year survival of adult patients with biopsy proved lupus nephritis, treated with individual and combine therapy including pulse Methylprednisolon, pulse Cyclophosphamide and daily oral doses of the both drugs, plasmapheresis and anticoagulant. Eighteen Caucasian patients (M:F=0:18; mean age 31±10 years; from 16 to 51 years) were followed for a mean 13.7±3.1 years (from 10 to 20 years). Some clinical and laboratory data were assessed at the beginning and during the period of observation. Renal biopsies were classified according to the WHO classification: class I - 3 patients; class II - 1 pts; class III - 3 pts; class IV - 8 pts; class V - 3 pts. Re-biopsies were performed with 12 patients. The activity and chronicity indexes were determined. All patients received therapy with pulse Methylprednisolone (mean number 13.3±10), followed by daily oral dose prednisolone (mean duration 92.5±52.3 months) and pulse Cyclophosphamide (mean number 14.1±11.3), followed by daily oral dose Cyclophosphamide 1 mg/kg for 56.1±57.6 months. Eleven patients (61%) received mean 15±27 (from 1 to 92) plasmaferesis during the immunosuppressive therapy. Eleven patients (61%) with resistant nephrotic syndrome received additionally Cyclosporine A 3mg/kg (mean 2.2±1 courses). Fourteen patients (78%) with nephrotic syndrome were treated with Heparin (mean 4.1±3.6 courses). Four patients (22%) had a renal onset of the disease. At the beginning of the nephritis ten patients (56%) had nephrotic syndrome and 8 ones (45%) had hypertension. All patients reached to at least one remission (mean 3.6±1.9). Survival analysis found that the ten-year survival was 100%. Serum creatinine (sCr) remained unchanged during the observation period (119±89 vs 104±83 μmol/l). At the end of the follow-up one patient progressed to CRF, 2 patients remained with CRF not required dialysis. CRF progressed to the end stage with 1 patient who received hemodialysis. The renal outcome correlated strongly with sCr (r=0.83) and activity index (r=0.48) at the onset of the nephritis and with fibrin deposits in re-biopsy (r=0.81). The ten-year survival of patients with lupus nephritis treated with individual and combine pathogenetic therapy was excellent with 100% patients survival.

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Carvedilol in slowing down chronic renal failure progression

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OP

Numerous studies analyzed effects of various antihypertensive drugs on CRF progression, but only few dealt with the effect of carvedilol, alpha-beta blocker with antiproliferative and antioxidative properties. With the aim to compare effects of carvedilol and enalapril on hypertension and CRF progression 27 patients (15 men) aged between 37 and 73 years with CRF (creatinine clearance 10 – 40 ml/min) were studied for 12 months. During the first 6 months patients were treated with antihypertensive agents other than angiotenzine converting enzyme inhibitors and carvedilol. Thereafter, patients were divided into two groups: group 1, 14 patients treated with carvedilol therapy and group 2, 13 patients treated with enalapril. Sistolic (SBP) and diastolic blood pressure (DBP) decreased significantly in both groups, without differences between them. Proteinuria decreased moderately in both groups, and slightly better in carvedilol group. Minimal changes in serum urea and creatinine as well as in creatinine clearance were registered in both groups. Changes of reciprocal serum creatinine values against time showed that carvedilol was as effective as enalapril in slowing down CRF progression during 6-month interval (slopes in 6th vs 12th month: carvedilol -0.0085 vs 0.0022; enalapril 0.0384 vs -0.075). In conclusion, both carvedilol and enalapril enabled normalization of blood pressure and decreased slightly proteinuria. Carvedilol had similar beneficial effect on CRF progression as enalapril.

Nutritional status of maintenance hemodialysis patients at department of nephrology, clinical center, Skopje, Macedonia

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PP

Many studies for nutritional status of maintenance hemodialysis patients find that their malnutrition is related to higher percentage of morbidity and mortality. AIMS: To estimate the nutritional status of maintenance hemodialysis patients at Department of Nephrology, to correlate our data with those from normal population from NHANES study data and with measurements from the same affected population from Cleveland dialysis study. MATERIAL AND METHODS: Our study was made on 43 patients (29 men and 14 women, mean age = 50yr and mean time on dialysis = 85 mounts). The levels of biochemical parameters (serum protein, albumin, urea, creatinin and cholesterol) were taken from their laboratory blood tests for last six mounts. Anthropometrics measurements: percent of standard body weight (%SBW), body mass index (BMI), triceps skin fold (TSF) and mid arm circumference (MAC) were made at the end of dialysis, at the arm without access, with calibrated caliper and tape. RESULTS: The values of biochemical parameters of our patients are above standard values, but our patients of both sexes are more muscle than fat depleted, with woman less depleted compared to the NHANES study percentiles. DISCUSSION: The evidence for protein–energy malnutrition in maintenance hemodialysis patients in our study is decreased percentage of %SBW (70% - 90%), compared to normal population of similar gender from NHANES study. Certain anthropometrical measurements of nutritional status are abnormal in maintenance hemodialysis patients who appear to be particular robust; thus newer standards for measuring nutritional status are needed for this patients, so that realistic goals can be established for attaining optimal body nutriture.

An extraordinary mitochondrial disease presenting with renal tubular acidosis type IV

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PP

Growth retardation is a clinical finding that generally implies an underlying serious pathology. In this report a 9 year old girl with abdominal pain and growth retardation is presented. Her physical examination revealed pathological short stature but was otherwise normal. Laboratory findings were as follows: blood urea: 76 mg/dl, creatinine: 1.1 mg/dl and potassium: 6.6 mEq/L. Hyperchloremic metabolic acidosis with a normal anion gap was found and she was diagnosed as renal tubular acidosis type IV. The clinical event was considered to be due to hyporeninemic hypoaldosteronism. Further investigation to explain the abdominal pain, showed high serum amylase (167 IU/L) level. Abdominal ultrasonography revealed decreased renal size and mild edematous changes in the pancreas. The creatinine clearance was 71.5 ml/min/1.73 m2 and the renal biopsy depicted chronic pyelonephritis. Due to multisystemic involvement, a mitochondrial disease was suspected. ERG covered retinopathy, EEG yielded epileptic waves and the F-VEP latencies were slightly prolonged. Serum lactate and pyruvate levels were normal and the muscle biopsy was inconclusive. Despite the recovery of electrolyte, blood gas and amylase levels with mineralocorticoid treatment, growth development did not improve. In the second year of her follow up bloody stools accompanied the abdominal pain and neurological findings appeared in the third year.

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The repeated nerve-muscle biopsy was relevant with mitochondrial disease. The patient died after acute lost with acute loss of consciousness, hearing and vision. In conclusion, we report a patient with type IV RTA and short stature who turned out to be a mitochondrial cytopathy and long-term follow up may be necessary to established the diagnosis.

Sclerosing encapsulating peritonitis: a late adverse effect of chronic peritoneal dialysis

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PP

The use of chronic peritoneal dialysis (CPD) has increased the survival of patients however it has also brought about many relevant late adverse effects. SEP develops with increased thickness of the peritoneum whereby long term dialysis and recurrent episodes of peritonitis are considered to be the primary causes in the etiopathogenesis. It presents with intestinal obstruction findings, although radiological interventions support the diagnosis, peritoneal biopsy is necessary to confirm the diagnosis. Eighty patients, that were followed in our clinic with CPD between 1989-2003, were found to have a mean dialysis period of 20.94±19.86 months and a peritonitis rate of 0.84 episode/patient year. SEP was detected in two patients who had undergone CPD for 47 and 53 months. The incidence of SEP was found to be 2.5%. Both of the patients had insufficient ultrafiltrate and CPD was switched onto hemodialysis after Staphylococcus aureus peritonitis. In both of the patients a mass was detected in the abdomen and the diagnosis of SEP was supported with ultrasonograpy and computed tomography. In one of the patients the diagnosis was histologically confirmed but in the other one peritoneal biopsy could not have been performed due to the risks of the procedure. Overall, as far as the increase in the number of CPD patients and the longer waiting periods for transplantation in our country are concerned, we underscore the necessity of close monitorization of these patients with regard to this highly mortal pathology.

A defect early in the signal transduction of the T-cell in haemodialysis patients

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PP

Background. Patients in regular haemodialysis treatment are in an immunodeficiency state. Several studies have shown defective T-cell proliferation after stimulation with various agents. Staphylococcal enterotoxin B (SEB), is a MHC-dependent superantigen that triggers proliferation of a large T-cell proportion. T-cell activation after stimulation with SEB parallels normal T-cell signal transduction. An important and early event in this transduction pathway is the phosphorylation of z chain. In this study, T-cell proliferation and z chain phosphorylation after stimulation with SEB were evaluated. Methods. Peripheral blood mononuclear cells (PBMC) from 24 patients and 14 healthy individuals were isolated and cultured with or without stimulation with SEB (1ng/ml). Cell proliferation was estimated by immunoenzymatic measurement of bromodeoxyuridine uptake. PBMC from 8 patients and 6 healthy individuals were isolated and pulsed for 2 min with or without SEB (10mg/ml). Zeta chain phosphorylation was estimated by immunoprecipitation and immunoblotting with antiphosphotyrosine antibody. Results. Lymphocyte proliferation index after SEB stimulation was lower in haemodialysed patients. Stimulation of T-cells with SEB resulted in a lower z-chain phosphorylation in haemodialysed patients too. Conclusions. Lymphocyte proliferation after MHC dependent stimulation is impaired in haemodialysed patients. This proliferation defect is due to impaired z chain phosphorylation.

Spinal tuberculosis with unusual localization in patients with end-stage renal disease

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PP

Extrapulmonary tuberculosis presenting with unusual localization is more common in patients with end-stage renal disease and frequently causes both diagnostic and therapeutic challenges. We describe 2 dialysis patients with unusual localizations of tuberculosis of the spine (Pott's disease).

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The first patient presented with neck pain, weakness in both arms and difficulty in walking. Physical examination revealed stiffness in the neck, weakness in all extremities and two tender lymphadenopaties in the right supraclavicular area. In radiological examinations, an epidural abscess with destruction of C5-C6 vertebral bodies was found. Histopathological examination of the biopsy from supraclavicular lymph nodes showed granulomatous lymphadenitis. She then underwent an operation and histopathology of the operation specimen showed similar granulomas containing Langhans type giant cells and central caseification together with a nonspecific pyogenic inflammation in the surrounding soft tissue. Medical therapy with antituberculosis agents and antibiotics was started and partial recovery was achieved. The second patient developed low back pain radiating down to her legs which then progressed to weakness and paresthesia of the legs in three months. Magnetic resonans imaging showed destruction in only the posterior elements of L4 vertebra. Histopathology of the operation specimes revealed caseating granulomata with acid fast bacilli. After antituberculosis therapy the patient recovered completely. Our cases demonstrate that the awareness of the manifestations of spinal tuberculosis in patients with chronic renal failure may lead to early diagnosis and treatment.

Children under hemodialysis treatment for chronic renal failure: their expectations from the hemodialysis unit

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PP

Hemodialysis treatment can be very tiring and unpleasant especially for pediatric patients, their families and also for their treatment team. The expectations of these children from the hemodialysis unit were noted by means of a questionaire.15 children (8 boys, 7 girls) aged between 6-18 years (mean age: 12 years) were included in the study. All children stated that they needed a constant transportation facility provided by the hospital. Ten (67%) patients preferred to be treated in a paediatric hemodialysis unit whereas 5 (33%) elder children were happy to be in an adult department. Six (40%) children were willing to go to school while 9 (60%) did not want to go to school. All children stated that they would be more happy in a comfortable room with TV. They all seemed more peaceful when a member of the therapy team spent time with them either by reading books, playing games or simply by talking. Their prime wish was to shorten the time and decrease the number of dialysis sessions. Nine (60%) children wanted to have dialysis in the same dialysis machine while others did not have any preference. Eleven (73%) patients preferred to have the same nurse to needle their fistula and also to supervise their therapy session. Therefore, the therapy team should try to provide their basic needs and fulfill the expectations of these patients and their families. Such an approach would help the patients, their families and also the therapy team to deal with problems and decrease the anxiety.

Autonomicneuropathy in hemodialysis patients

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PP

Autonomic neuropathy is a manifestation of the polyneuropathy observed in uremic patients. We aimed to evaluate the prevelance of autonomic neuropathy among patients under hemodialysis treatment in our Dialysis Unit. Eighteen patients with an age range of 17-75 years (mean age: 45 years) were included in the study. All patients suffering from chronic renal failure were under hemodialysis treatment for a period ranging from 6 months to 8 years with a mean of 3.2 years. They were all tested for autonomic neuropathy and the results were compared with those of 18 healthy controls aged between 21-62 years (mean age of 42.1 years). Patients and controls with autonomic neuropathy were classified as sympathic, parasympathic and combined (sympathic+parasympathic) neuropathy groups. Autonomic neuropathy was observed in 15 (83.3%) patients out of 18 and 5 controls out of 18 (27.7%) ($p<0.005$). Parasympathic test abnormality was found in all 15 patients with autonomic neuropathy. Nine of thease patients were defined as combined dysfunction since they also had sympatic abnormality. Six patients had isolated parasympathic disfunction while none had siolated sympathic abnormality. When patients were age-grouped, 10 of the 11 patients over 45 years, 5 of the 7 patients under 45 years had autonomic neuropathy ($p>0.05$). Our results showed that autonomic neuropathy especially with parasympathic dysfunction has a high prevelance among patients undergoing hemodialysis treatment for end-stage renal disease.

Pseudotumor cerebri after renal transplantation

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PP

Pseudotumor cerebri (PTC) is a syndrome with increased intracranial pressure (>200 mmH2O) and characterized by headache, loss of vision and papiledema. Many drugs and diseases may lead to this clinical picture and Cyclosporin A is one of them. A 17-year-old case with PTC who had undergone cadaveric renal transplantation due to chronic renal failure secondary to reflux nephropathy after six months'

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duration of hemodialysis program and who was on CyA, azothiopurine and steroid as immune suppressants for 3 years after transplantation is reported hereby. It should be kept in mind that the patients who undergo renal transplantation and who are on treatment modalities including CyA are at risk of PTC and delay of prompt treatment may lead to blindness.

ACE gene polymorphism and renal scarring in children with vesicouretheral reflux

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PP

BACKGROUND: The possible relationship between the angiotensin-converting enzyme (ACE) gene Insertion/Deletion (I/D) polymorphism and renal scarring secondary to vesicouretheral reflux (VUR) has recently attracted an attention and DD genotype was postulated to be a risk factor for renal scarring. However, available data represents conflicting results. OBJECTIVES: We studied the relationship between ACE gene I/D polymorphism and renal scarring in children suffering from VUR, and examined the influence of ACE gene deletion polymorphism on renal scarring. MATERIAL AND METHODS: Seventy-seven (53 female, 24 male) cases (age of diagnoses 3.9±3.6, mean±SD) with VUR were included in this study and were assessed for ACE I/D gene polymorphism. Voiding cystourethrograpahy (VCUG) was performed to all cases. VUR was diagnosed by VCUG and classified as Grade I-V according to International Reflux Classification. Renal scarring was evaluated by dimercaptosuccinic acid scanning (DMSA). There was moderate reflux (grade 1-3) in 57 (%74.1) and severe reflux (grade 4-5) in 20 (%25.9) out of 77 cases. ACE genotypes were determined as II, ID, and DD using the polymerase chain reaction technique. RESULTS: Dimercaptosuccinic acid scanning (DMSA) revealed renal scarring in 33 (%42.9) cases and revealed normal anatomy in 44 cases (%57.1). Age, gender, additional urinary abnormality, unilateral/bilateral VUR were not as risk factors for development of renal scarring. Renal scarring was more frequent in patients with high grade reflux than the low grade ones (75% and 35%, respectively, p=0.001). High grade reflux was found to be a risk factor for renal scarring (odds ratio 6.5, 95% confidence interval 2.04-20.6, p=0.001). Frequency of UTI was significantly higher in the group with renal scarring than the group without renal scarring (3.6±2.4 and 2.4±1.6, respectively, p=0,013). Having UTI three or more times during the follow up was found to be increasing the renal scarring 3.6 times more (95% confidence interval 1.19-7.82, p=0.022). There were 4 (5.2%) genotype II, 42 (54.5%) genotype ID and 31 (40.3%) genotype DD patients in the study group. Although we determined that genotype DD was more frequent in the group with renal scarring than the group without renal scarring (66.7% and 33.3%, respectively) there was no statistically significant difference between the two goups (p=0,24). DD genotype was not a risk factor in high grade reflux patients (odds ratio 0.54, 95% confidence interval 0.06-4.56, p=0.613), whereas in low grade patients it was found to be a risk factor with respect to renal scarring (odds ratio 4.0, 95% confidence interval 1.22-13.07, p=0.024). DISCUSSION: Despite renal scarring is not common in low grade reflux patients, there may be scarring in some of these patients. DD polymorphisim of ACE gene is a significant risk factor in low grade reflux patients with renal scarring. It was postulated that DD genotype of ACE gene had given rise to renal scarring by causing fibrosis.

Pediatric renal transplantation: single center experience

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PP

OBJECTIVE: Although renal Tx (RTx) is actually the first choice of treatment for children with end stage renal disease (ESRD), the number of transplanted children remains still low in comparison with adults. The experience of the individual pediatric transplant center is very important in the outcome of the pediatric transplant recipients. In this study, our pediatric renal transplantation experience was presented. MATERIAL AND METHOD: We retrospectively analyzed the results of 72 pediatric renal transplants performed at Ege University Pediatric Nephrology Transplantation Center between June 1989 and May 2003. RESULTS: They were 40 girls, 32 boys and their mean RTx age was 13.27 ± 3.73 years (range 3 to 20). Thirty-eight (52.8%) of the transplanted kidneys came from a living related donor (LRD), and 34 (47.2%) from a cadaveric donor (CAD). Pre-emptive RTx was performed in one patient and second RTx was performed in one patient after two weeks period hemodialysis. Etiologies of ESRD were glomerular disease 47 patients (65.2%) (33 patients chronic glomerulonephritis, 11 patients focal segmental glomerulosclerosis, 1 patient Alport's disease, 1 patient FMF, 1 patient Amyloidosis), twenty-two patients (30.5%) had anatomic abnormalities (20 patients vesicoureteral reflux (VUR), 1 patient obstructive uropaty and 1 patient renal dysplasia); the remaining three patients (4.1%) were due to unknown causes. Cyclosporine (CsA), prednisolone, and azathioprine (AZA) were used as immunosuppressive drugs in all LRD (30 patients); whereas Basiliximab added to the

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triple treatment after August 2001 (8 patients). Until April 2002 triple immunosuppression protocol was used in all CAD, while sequential therapy with ATG replacing cyclosporine was tried for 10 days postoperatively (21 patients). CsA was replaced FK506, after April 2002 (13 patients). Hypertension (31.9%), acute rejection (27.8%), chronic rejection (%13.9) were the most common complications on early period and long-term follow up period. Cytomegalovirus (CMV) infection occured in fifteen children (20.8%), none of whom died or lost their graft as a result of the infection. Pre-transplant acquired Hepatitis C virus (HCV) infection was detected in twelve patients (16.7%). Urinary tract infections (UTIs) were seen in 31 (43.1%) recipients. The 1, 5 and 10 year graft survival rates were 91%, 84%, and 77%, respectively, and corresponding patient survival rates were 97%, 84% and 76%, respectively by Kaplan Meier method. The graft and overall survival was no correlated with sex, donor type, treatment modality, acute rejection episods, hypertension, UTIs, CMV and HCV infection. CONCLUSSION: Although hypertension, acute-chronic rejection and infection remain still problem, renal transplantation in children offers an acceptable choice in ESRD.

Reuse of different types of dialysers: first longterm results in Turkey

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OP

Reuse which means using the same dialyser for the same patient more than once is performed in 82% of the centers in USA, however this number is much lower in Europe. In our country there are 23240 patients currently under dialysis treatment and this number is increasing by 15-16% every year hence the amount of money spent for dialysis is increasing more and more. Therefore performing reuse is becoming even more important. This study was done between march 2002 and may 2003 in 2 medical faculties. In IUCTF hemodialysis (HD) unit, polysulphone were used in 13, hemophane were used in 5, and cuprophane membranes were used in 5 chronic hemodialysis patients. In MUTF HD unit polysulphone membranes were used in 7 chronic HD patients. The reuse procedure was performed by a technician using renalin solution (peracetic acid, acetic acid and hydrogen peroxide) for sterilization and Renatron II machine. The patients were evaluated in terms of dialysis adequacy (Kt/V), ultrafiltration (UF), fiber bundle volum (FBV), serum total protein and albumin levels on 1,5,10,15 and 20th days of the reuse procedure. At the end of the study no significant difference was found between any parameters on these days. In our country, aproximately 3.240.000 dialysers are used. The annual cost of a single dialyser, A-V line and stick is approximately 15 €. The annual cost of dialysers of these patients approximately is 48.600.000 €. Performing reuse the benefit is approximately 9 € for each session. When the membrane is reused 10 times, the total benefit is approximately 30.000.000 € which means 60% of the expenditure is saved. In conclusion reuse procedure decreases the total cost of dialysers used, allows us using more high-flux membranes and also leads to decrease of 50% in total dialyser import of the country. Besides this some medical benefits are mentioned in some studies like decrease in incidence of first-use symptoms, chronic pruritis, hypotension and atherosclerosis.

Tuberculous peritonitis in two patients on CAPD

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PP

Peritoneal tuberculosis (PTb) is a serious problem in continuous ambulatory peritoneal dialysis (CAPD) patients. We report two cases of PTb complicating CAPD in a 27-year-old woman and in a 36-year-old man. In addition, a review of medical literature on the subject with an updated version of PTb cases emerged in CAPD patients is also presented. When we add our cases to previously reported data, the number of PTb cases complicating CAPD reached to eighty-four. Duration of CAPD was less than one year in 49.4 % of patients and in 46.4 % of the cases dialysis catheter was removed after the diagnosis. The most reliable diagnostic method was peritoneal fluid culture (54.8 %). No reaction was found in tuberculin skin tests in 66.7 % of patients who underwent PPD testing. Twenty-four of 84 patients died. Mean interval between onset of symptoms and the initiation of antituberculous treatment was 41.2±10.1 days. The disease should always be considered when patients undergoing CAPD have culture-negative peritonitis unresponsive to usual antibiotics.

Intravenous iron supplementation for the treatment of anemia in predialyzed chronic renal failure patients

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OP

Intravenous iron supplementation is known as efficient for the treatment of anemia in chronic hemodialyzed patients,

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especially in those treated with erythropoietin. The role of iron supplementation in predialysis chronic renal failure (CRF) patients is much less clear. The objective of the study was to evaluate the effects of one year intravenous iron supplementation in 36 patients with moderate CRF [22 males, 14 females, mean age 55.5 (33-78) years, creatinine clearance 23.4±9.4mL/min], without erythropoietin treatment. Intravenous iron was administered as Iron(III)-Hydroxide Sucrose complex in a total dose of 1600 mg elemental iron in 40 CRF patients (who remained anemic despite previous oral iron supplementation and without laboratory signs of iron overload) without erythropoietin treatment for 9 months. The hematologic response, iron status, renal function and blood pressure were investigated. 36 patients completed 9 months of study. Results:

Parameter	0	3rd month	6th month	9th month
Haemoglobin (g/dL)	9.7±1.1	10.5±1.0*	10.9±1.2*	11.2±0.9*
Transferrin saturation (mg/dL)	21.6±2.6	34.9±5.8*	26.8±5.6*	27.8±4.4*
Creatinine clearance (mL/min)	23.4±9.4	25.2±7.3	25.4±8.2	26.1±6.3
Systolic blood pressure (mmHg)	140±32	140±19	138±22	139±23
Diastolic blood pressure (mmHg)	82±20	80±12	81±14	80±18

* - p<0.05

After 9 months, intravenous iron supplementation was associated with significant increase in hemoglobin and transferrin saturation. No worsening of renal function and no other side effects were noted. Intravenous iron therapy in predialysis patients without erythropoietin therapy seems to improve the anemia, avoiding erythropoietin administration or blood transfusions. Intravenous iron supplementation appears to be safe and effective for the treatment of anemia in CRF pre-dialysis patients.

Follow-up of tunneled dialysis catheters: femoral vs. jugular vs. subclavian catheters

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OP

Tunneled, cuffed catheters are being increasingly used as hemodialysis (HD) access in patients with chronic renal failure. We analyzed function and complications associated with 181 tunneled dialysis catheters (TDC) at 123 patients on regular HD program. TDC were divided in three groups: Group1. Tunneled femoral catheters(TFC) - 103, Group2. Tunneled jugular catheters (TJC) - 41 and Group3. Tunneled subclavian catheters (TSC) - 37. Duration time of catheters: Gr.1 5-542 days (average 139 days), Gr. 2-4 - 1704 days (average 429 d) Gr.3: 4-1607 days (average 350 d). Catheters were removed when no longer required, or when significant complications occured. When we have signs of infection we took blood culture from catheter(BCC), and from peripheral vein (BCP) concomitantly, and when catheters were removed.BCC and BCP were corelated with cultures from the catheter tip (CT). Removed for malfunction: Group 1 -30 catheters (29%) becouse of poor blood flow, at Group 2 -14 cath.(34%), and in Group 3- 15 cath.(40%) for the same reason.For suspected bacteremia were removed: Group 1- 6cath. (5,8%), Group 2- 4cath.(9,7%) and Group 3-1cath. (2,7%). Infection rate was Gr.1-4,1 episodes/1000 cath. days, Gr.2: 2,8 episodes/1000 cath. days, Gr.3-3,6 episodes/1000 cath. days. Isolated microorganism were: Staphylococcus coagulasa negative, Staphylococcus aureus, Enterococcus et etc. Statistically significant difference between three groups of TDC was found only in the analysis of catheter tip (Chi-square test, p<0,05). Only 11 TDC from 181 were removed under suspicion of catheter-related infection, while all other catheter-related infections were succesfully resolved with antibiotics, and catheters were used subsequently. There is no significant difference between the incidence of infection among the three types of TDC - TFC, TJC, TSC.

Treatment with cyclosporine A of chronic glomerulonephritis with proved resistance to the medication with corticosteroids and immunosuppressors as mono- and bicomponential therapy

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PP

Cyclosporin-A is a selective immunosuppressor, grinding the T-cell respondent reaction and preventing the production of Interleukin-2. Its common application is like unique immunosuppressive agent; it has also the role for prevention of the graft rejection in transplantology. This is a reason to search its place while treating of those glomerulonephritis, which are resistant to conventional and pulsed medication with korticosteroides and immunosuppressors. They are taking a pointedly resistant and difficult to control behavior neurotic courses. We examined 15 patients in different states of chronic glomerulonephritis, morphologically proved by kidney biopsy /membranous, mesangiocapillary, FSGSH/, and treated with repeated seances of pulse medication with korticosteroides and immunosuppressors /Cyclophosphamid, Imuran or mixture of the both/, but it wasn't produced a good, clear and considerable therapeutic effect. A common dosage of Cyclosporin-A was given - 3-5 mg/kg in 24 hours. The treatment duration was 3-12 months /at the average of 6 months/, depending on the reviewed therapeutic result and the possibility for application of a

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long-term course of medication. Results: A period under review showed a remarkable reduction of the proteinuria /at the average of 4,5-0,5g in 24 hours/ and also of the nephritic behavior; the biochemical constellation improvement including the nephritic syndrome; a notable effects on the albuminous serum concentrations, which remained hospital with optimal and suboptimal values; improvement or hospitalization of the kidney function. A certain unfavorable effect on the hypertension resistance was registered in 3 patients, which is probably potential from the Cyclosporin effect on the vessels. In order to optimize its resorbtion and raise of the assimilation of the medicine and in connection with the tendency for application of not so high dosage, in some of the cases we added calcium antagonists in the general therapeutic scheme.

The influence on cardiovascular diseases of late referral to nephrologist of patients with chronic renal disease

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PP

The early referral of patients with chronic renal disease (CRD) to nephrologist has shown its advantages in their treatment and medical care. The aim of this study was to evaluate the impact of late referral on cardiovascular diseases (CVD) that are the major cause of morbidity and mortality in the end-stage renal disease. For this propose we evaluated the time the beginning of the symptoms to the first nephrologic visit in 111 patients who has been referred for the first time in our nephrologic clinic. We evaluated the presence of left ventricular hypertrophy (LVH), of ischiemic heart disease (IHD), dysrithmias and congestive heart failure (CHF). We found that the vast majority of the patients had been referred at late stages, presenting already advanced CRD. 75.6 % of them presented different anomalies of the geometry of the left ventricle and 45% presented already left ventricular dilatation. IHD was present in 20% of the cases, while dysrithmias were present in 22.5% of the cases and none of the patients presented episodes of CHF. We conclude that the late referral of the patients with CRD is accompanied with high burden of CVD, especially with LVH, left ventricular dilatation IHD and dysrithmias.

The impact of hypertension and anaemia on the abnormalities of left ventricular geometry in chronic renal disease patients

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PP

The abnormalities of the left ventricular geometry are one of the major pathological conditions that determines the prevalence of cardio-vascular diseases in patients with chronic renal disease (CRD). Between the risks factors that contribute in the implementation of left ventricular abnormalities, hypertension and anaemia are the major determinants. The aim of this study is the evaluation of the impact of hypertension and anaemia on the implementation of the abnormalities of left ventricular geometry. We studied 146 patients in different stages of CRD admitted at the service of nephrology and dialysis in the period from January 2000 - February 2002. The prevalence of left ventricular abnormalities has been determined by bidimensional echocardiography. We determine the level of blood pressure for each patient. We evaluated anaemia for each patient by the level of haemoglobin. The echocardiographicly determined prevalence of left ventricular abnormalities was 77,5% in the mild-moderated CRF; 83,0% in severe CRF; 86,7% at the dialysis start and 85,7% in the hemodialysis group. The overall blood pressure was 155/97,25mmHg; 141,2/94,4mmHg; 150,5/97,7mmHg; 146,9/88,4mmHg in each category of patients with CRD, whereas the overall haemoglobin was 8,6gr/dL; 8,1gr/dL; 7,5gr/dL and 9,24gr/dL respectively. The evaluation of the specific role of hypertension and anaemia on the implementation of left ventricular abnormalities has been determined using the ANOVA multifactorial analysis. Both anaemia and hypertension play a key role in the implementation of abnormalities of left ventricular geometry. The ANOVA analysis shows that the impact of hypertension is more relevant that the impact of anaemia.

The incidence of the urothelial tumors in Jablanic area

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OP

Higher incidence of upper urothelial tumors in patients with endemic nephropathy (EN) and in regionss with EN, suggests on slose relationship between these two diseases. The aim of the study is tracking the dynamics of occurence of urothelial tumors (UT) according the age and sex and the

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incidence of it is occurence in Jablanic area.The incidence of UT or upper urothelium tumor- pyelon and urether (UUT) and urinary bladder tumor (UBT), is the most common in regions where endemic nephropathy often occurs. This study encloses the material from the Urology Department of Medical Centre in Leskovac and from the Urology Department of the Clinical Centre in Nis. During the period of observation, 1978-2002, we separted 467 recorded patients in groups by settlements: endemic (A), hypoendemic (B), urban nonendemic (C) and rural nonendemic (D). The incidence rate was calculated for 100 000 inhabitants. The statistic significance is accepted on the level from $p<0.05$. During the observed period there were 467 patients of average age of 62.5 (the youngest had 31, and the oldest 83 yers). The incidence of UT by sex showed not significant difference by UUT(male 40 vs.female 43) and by UBT very significant difference(male 306 vs.female 78). The approximate annual rate of pyelon tumor and urether incidence in endemic settlements for the period from 1978-2002 was 17.56. This rate is significantly less in hypo endemic (5.06) and non-endemic settlements (1.01). Considering the urinary bladder tumor appearance, this search has pointed to the highest annual rate of incidence in the case of endemic settlement patients (20.26). It is significantly less (8.22 and 5.79) in the case of hypo endemic and non-endemic. Compared between UUT vs. UBT we noted not significant difference by A group (17.56 vs.20.26) ($p>0.05$) and very significant difference by D group (1.04 vs.6.31) ($p<0.01$). But, in some places in D group the incidence of UUT are very high, as Brejanovac village (AARI is 40.50).

Table 1. The Incidence of UT for period 1978 - 2002

Group	UUT, UBT, UUT, and UBT				AARI	p
	Numbers of patients	Average Annual Rate of Incidence	Numbers of patients	Average Annual Rate of Incidence		
A	13	17.56	15	20.26	37.82	p>0.05
B	5.06	13	8	8.22	13.28	P<0.05
C	18	0.94	89	4.66	5.60	P<0.01
D	44	1.04	267	6.31	7.35	P<0.01
Total Area	83	1.30	384	6.02	7.32	P<0.01

A- 2961; B- 6329; C- 76352; D- 169369; E- 255011(Jablanicki okrug)

Urinary NAG in the evaluation of the evolution and nephrotoxicity of the UTI treatment with quinolones and amikacin

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PP

NAG, an enzyme located in the proximal tubular cells, is excreted in increased quantities because of cellular lesions. Therefore, it could be useful in the follow-up of both UTI evolution and the nephrotoxic effect of the drugs. We have set ourselves to investigate urinary NAG during the treatment with amikacin and quinolones of pyelonephritis (acute and chronic in the acute phase). We followed up 28 patients hospitalized in the Department of Nephrology Timisoara, and a control group of 8 apparently healthy individuals, who did not take any drugs. In this latter group, mean urinary NAG was 1.72 u/l. In the 14 patients, treated with quinolones, mean urinary NAG decreased after an initial increase. In 14 patients treated with amikacin, mean urinary NAG before treatment was 5.08 u/l+/-6.33 u/l, after 7 days-6.13u/l, and at the end of the treatment 9.32 u/l. ($p<0.03$). In this group, urinary NAG decreased in 7 patients and increased in another 7 patients. The initial increase of urinary NAG, before any treatment is a marker of the tubular lesions, in the course of UTI, while the increase of NAG, during a favorable evolution of UTI, could be due to the nephrotoxicity of the drugs used.

Long term effect of erythropoietin on lipids in patients with chronic renal failure

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PP

Erythropoietin (rhuEpo) is a standard therapy of anemia in end-stage renal disease (ESRD) patients. However there are conflicting reports concerning the effect of rhuEpo on lipid metabolism in ESRD patients. According to the DOQI guidelines, rhuEpo therapy has been extended also to pre-ESRD-patients. Until now there are no data to show if rhuEpo has any effect on lipids in pre-ESRD patients. In our study we evaluated, if rhuEPO therapy affects the lipid profile in patients with mild or moderate renal insufficiency. A prospective randomized study was performed in 59 patients (33 M, 26 F), with various degree of renal insufficiency, aged 59 years (median). Thirty-one patients (group I) were treated with rhu-Epo (50 IU/kg/week), targeting to increase Hb levels between 11-13 g/dl. The other patients (group II) were not treated with rhu-Epo. Total cholesterol, Triglycerides, HDL-cholesterol, LDL-cholesterol, Lp(a) and Apolipoproteins A, B and E were measured before and at 2, 4, 6 and 12 months after initiation of the study. At the end of the study, both groups presented the same degree of reduction of renal function. As expected, a statistical significant increase in Ht (from 31.2±2.6 to 37.0±2.7%) and Hb (from 10.1±0.8 to 12.2±1.0 g/dl) was observed in group I. In group II, the Ht and Hb remained stable. During the study in

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both groups, we did not observe any significant alterations on lipid parameters, including Lp(a). We conclude that long term rhuEpo therapy does not affect the lipid parameters in patients with different degree of renal failure.

Renal failure in glomerular diseases at the moment of biopsy

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OP

We analyzed occurrence of renal failure in 642 patients biopsied at our Department. The results were as follows: 1) Acute glomerulonephritis (GN), 33 with acute renal failure (ARF), creatinine 310,1+-55,2; 2) Crescentic GN, 55 patients, 31 with ARF, 17 with CRF, creatinine 717,7+-68,3; 3) Membranoproliferative GN, 50 patients, 17 with CRF, creatinine 180,3+-15,2; 4) Minimal change disease, 45 patients, 11 with ARF, creatinine 278,2+-124,1; 5) IgAN 85 patients, with CRF 19, creatinine 170,9+-18,9; 6) Focal segmental glomerulosclerosis 68 patients, 41 with CRF, creatinine 210,2+-21,1; 7) Mesangial GN, 129 patients, 30 with CRF and creatinine 226,4+-43,2; 8) Membranous GN, 89 patients, with ARF 3 and CRF 11, creatinine 235,3+-40; 9) Purpura HC 7 patients, ARF 1, CRF 4; and 10) Lupus GN, 43 patients, ARF 2, CRF 16 and creatinine 450,8+-108,7. We can conclude that renal biopsy in high percentage of our patients was done late, without possibility of treatment.

Histopathological indexes of activity and chronicity: predictors of renal outcome in lupus nephritis

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OP

We retrospectively analyzed 42 biopsied patients with lupus nephritis, 4 male, 38 female, aged 15-51, who fulfilled the criteria of the American Rheumatism Association for SLE. We found class I LN in one, class II in 7, class III in 8, class IV in 15, class V in 8, class VI in 2, and interstitial form in one patient. The prognostic significance of renal histological indexes such as those of activity and chronicity was evaluated comparing to survival of the patients (Kaplan-Meier). Cumulative survival analysis presented that the probability of appearance of renal failure after 10 years of diagnosis was significantly higher in patients with AI>11 and CI>3. Survival of patients presented significant correlation with both AI (-438, p=0,004) and CI (-621, p=0,000). 17/42 patients started chronic dialyisis treatment during the follow-up (renal death), two died because of severe CNS lupus and two because of irreversible heart failure.

Abnormalities of cellural immunity in uremic patients undergoing continous ambulatory peritoneal dialysis

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OP

OBJECTIVE: The role of lymphocytes in host immunity for CAPD patients is just beginning to be understood. In order to clarify the abnormalities of cellural immune responses in uremic patients undergoing CAPD, we studied as immunological parameters lymphocytes subsets counts. PATIENTS AND METHODS: 45 healthy volunteers and 37 patients on CAPD therapy were recruited for the present study. Lymphocyte subpopulations (CD2, CD3, CD3+/CD4+, CD3+/CD8+, CD3-/16+56+, CD19, CD4/CD8) were determined by flow cytometry. Statistical evaluation was made by Student's t-test. RESULTS: CAPD patients showed increased natural killer cells than controls (15,22+/-9,49 vs 10,13+/4,10 , p=NS). CD4/CD8 ratio levels were higher in CAPD patients compared with controls (2,11+/-1,42 vs 2,01+/-0,74 , p=NS). CAPD patients showed lower lymphocyte subpopulations comparing with controls and especially CD2, CD3+/CD4+, CD19 cell counts were significantly lower than healthy subjects. CONCLUSIONS: These results may explain the increased vulnerability to infections in CAPD patients compared with healthy subjects. Additionally increased natural killer cells may reflect chronic sterile or infectious inflammatory response.

Lymphocytes subsets in the course of continuous ambulatory peritoneal dialysis

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PP

OBJECTIVE: The present study evaluated whether estimation of lymphocyte subsets counts (LSC) can be more helpful than total lyphocyte count (TLC) in earlier diagnosis of immune and nutritional changes in the course of CAPD. PATIENTS-METHODS: For the study, 37 CAPD patients were recruited and divided in four groups depending on du-

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ration of therapy. Group 1 consisted of patients treated for 0-6 months (n= 6), group II, for 6-12 months (n=6), group III, for 13-24 months (n=16), and group IV, for more than 25 months (n=9). Flow cytometry was used for estimation of LSC (determination of CD2, CD3, CD3+/CD4+, CD3+/CD8+, CD3-/16+56+, CD19, CD4/CD8). RESULTS: Our uremic patients started CAPD with decreased LSC, slightly above the normal range (excluding CD3-/16+56+, CD2). After 6 months of CAPD therapy an increase in CD4/CD8 ratio was observed and all examined LSC decreased (excluding CD2). In patients on CAPD for more than 25 months, CD3+/CD4+, CD19 counts were below the normal range, CD3-/16+56+ exceeded the upper limit of normal range and at the same time mean TLC was maintained in the normal range. CONCLUSIONS: In the first months of CAPD therapy we may see an improvement in immune status as expressed by an increase in CD4/CD8 ratio. Repeat determinations of CD3, CD3+/CD4+, CD3+/CD8+, CD19 indicate that these counts decrease earlier than an evaluation of TLC indicates. We recommend LSC for detection of immune abnormalities in CAPD. An increase of natural killer cells above the normal range may reflect chronic sterile or infectious inflammatory response.

Effects of amino acid dialysis solution on parameters of nutrition in malnourished continuous ambulatory peritoneal dialysis patients.

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PP

OBJECTIVE: The severely problem in peritoneal dilysis (PD) patients is malnutrition that is important causes for morbidity and mortality. In recent years, amino acid dialysis solution is used for improving malnutrition. In this study, we aimed to evaluate the changes of nutritional condutions in malnourished continuous ambulatory peritoneal dialysis patients (CAPD) that is dialyzed with PD solution containing 1,1% amino acids (nutrineal). MATERIAL AND METHODS: 19 CAPD patients (levels of serum albumin ? 3,5 g/dl) were studied. 10 patients (4 patients were exitus, 2 patients transfered to hemodilysis (HD), 1 patient transfered to APD, stomach ache was developed in 2 patients, nausea-vomiting was developed in 1 patients) were excluded for the study. Mean age of 9 patients (7M/2W, mean CAPD period is 20±19.3 month) that completed the study was 49.5±11.1 (34-67)years. There was DM in 4 patients. The patients made overnight exchanges with nutrineal. Serum urea, creatinine, total protein, albumin, uric acid, phosphorus, total cholestrol, triglycerides, hemoglobin levels were assessed at baseline and at month 3 and 6. Body mass index (BMI), triceps skinfold thickness (TST), body fat were measured at baseline and 6. month. Also, levels of pH and HCO3 were determined with arterial blood gas. Treatment of CaCO3 was given to all of the patients for avoiding acidosis risk at baseline. RESULTS: There was not difference between levels of pH and HCO3 at baseline and 6. month. After the 6 month fallowing, we did't found significant relation between levels of creatinine, total protein, albumin, uric acid, phosphorus, total cholesterol, triglycerides, hemoglobin, BMI, TST and body fat at baseline and 6.month; except of increasing serum urea levels (p=0,018). After the 3 patients whom episodes of peritonitis occured during the study period were excepted from evaluation; levels of serum albumin and total protein at 3.month were found significantly increasing according to baseline. Levels of 6.month was high according to baseline, but this was't significant. CONCLUSION: In conclusion, we think that using of PD solution containing 1,1% amino acids (nutrineal) in malnourished CAPD patients can assist for protecting present condition at least.

Table 1. Levels of baseline and 6. month in patints.

Parameters	Baseline	6. month	P
Albumin (g/dl)	3.0±0.6	3.1±0.8	NS
Cholestrol (mg/dl)	210.3±53.1	190.4±45.3	NS
Urea (mg/dl)	83.1±27.6	129.8±27.9	0.018
Phosphorus (mg/dl)	4.1±1.2	3.5±1.1	NS
TST(mm)	7.8±3.0	8.6±3.9	NS
Body fat	18.6±8.4	21.2±11.7	NS

The evaluation of demography, clinical and laboratory characteristics and the factors of health-related quality of life in haemodialysis patients in Konya

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PP

Objective:In this study, we aimed to evaluate relation between the health related quality of life and demography-clinic-laboratory characteristic of hemodialysis patients in Konya. Methods: 511 patients (279 male, 232 female) were studied. Mean age was 47.8±15.6 years. SF-36 test was adminestered on patients to evaluate the quality of life and physical and mental component scores were calculated. Results: Mean physical and mental component scores were respectively 47.2±23.1 and 53.2±21.1. There was a significant relation between physical and mental component scores and age, sex, educational level, employment status, serum albumin and Hb levels. Moreover, we found positive correlation between physical-mental component scores and serum albumin and Hb levels, but there was a negative correlations between same scores and age. Conclusion: Because of important relation between health related quality of life and morbidite-mortalite, health related quality of life in dialysis patients has been evaluated periodically.

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Quality of life and effecting factors in hemodialysis and CAPD patients

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OP

Aim: In this study we compared hemodialysis patients with CAPD patients in view of quality of life and investigated effecting factors. Methods: Seventy-two hemodialysis (HD) (39 male, 33 female) and 59 CAPD (32 male, 27 female) patients were included in the study. Mean age of the patients was 46.5±17.3 and 47.5±13.9 years, respectirely. They were dialysed for at least 6 months. All patients were free from severe hypertension and congestive heart failure. SF-36 test was applied to the patients to evaluate quality of life. Mean physical and mental component scores were calculated. There was no difference between HD and CAPD patients in age, dialysis duration, diabetic patient ratio, hemoglobin level and EPO usage rate. Serum albumin level was higher in HD patients (4.1±0.3 and 3.9±0.49 respectively) (P=0.008). Results:

	HD group	CAPD group	P=
Physical component scores	59.7±21.8	51.5±23.5	0.041
Mental component scores	62.5±22.1	57.5±21.5	NS

Physical component score was significantly higher in HD patients (P=0.041). Mean mental companent score was 5 points higher, but difference was not significant. Physical and mental component scores were positively correlated to albumin level, having a job and better education level but not to age, gender, marriage status and hemoglobin level in HD patients. In CAPD patients only age was negatively correlated to physical and mental conponent scores. Conclusion: Physical component score of HD patients is higher than those of CAPD patients. Since quality of life scores are related to morbidity and mortality, health-related quality of life should be evaluated periodically.

High interdialytic weight gain does not reflect a better nutritional status

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PP

In order to evaluate the relationship between interdialytic weight gain (IWG) and nutritional status, we studied prospectively 33 stable HD patients, aged 39-86 yrs, for a 6 months period, divided in 2 groups according to IWG: G1(n=13) with IWG>4% and G2(n=20) with IWG≤4% of dry body weight. We calculated Kt/V urea and NPCR (g/Kg/day) according to UKM, TACurea (mg/dl), BMI (Kg/m2) and measured albumin (Alb, g/dl), C3, immunoglobulins and total lymphocyte count. Using a 5-day dietary history, protein (DPI-L, g/Kg/day) and caloric intake (DPI-C, Kcal/Kg/day) were estimated by a dietician. No significant differences were demonstrated between G1 and G2 in Kt/V (1,32±0,21 vs 1,2±0,18), NPCR (1,39±0,14 vs 1,28±0,26), TACurea (164,1±25,5 vs 162,0±26,0), BMI (25,5±4,3 vs 23,4±3,1), DPI-L (0,95±0,37 vs 1,0±0,25), DPI-C (22,7±7,5 vs 26,5±7,2), as well as C3, immunoglobulins and total lymphocyte count. Alb levels were higher in G1 (4,5±0,1 vs 4,3±0,3, P=0,02) with minor statistical significance. Our results indicate that high IWG in HD patients is attributed to excess fluid intake and does not reflect a better nutritional status.

Pulse pressure response to atenolol in hypertensive hemodialysis patients

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PP

High Pulse Pressure (PP) is considered a major sign of large vessel atherosclerosis and a factor for cardiovascular mortality that are frequently observed in hemodialysis (HD) patients (pts). We investigated the effects of atenolol administration in 10 stable pts (7M/3F), median age 60.5 years (38-72), moderately hypertensive with high PP despite adequate hemodialysis from a median of 56.5 months (8-156) (group A). A similar group of 11 normotensive dialysis pts served as controls (B). Mean Arterial Pressure (MAP) measured before 3 consecutive dialysis sessions (A/B: 102.2±5.6/93.5±10.6 mmHg, P=0.03) and a 44 hour holter reading, after the mid-week session (A/B: 104±11.5 / 91.9±9.9 mmHg, P<0.02) differentiated the two groups (A/B) in the beginning of the study (T0). PP was calculated from holter Mean Systolic Arterial Pressure (MSAP) - Mean Diastolic Arterial Pressure (MDAP). Atenolol was started in A pts, at 37.5 mg/week on an alternate day schedule and increased to a median of 68.75 (37.5-450) mg/week, as needed, for a median 34 days (6-80) (T1: titration period). Treatment continued for 180 days (T2: treatment period). Weight changes, hematology, biochemistry were also registered. Echocardiography was done at T0 and T2. Holter examination was repeated in A pts at T1 and T2. In all patients (A and B), at T0, PP correlated significantly to age, systolic load, MSAP, heart rate (HR) and was inversely related to aortic diameter in systole (AODs) and to time on dialysis (THD) only in A pts. Blood pressure under atenolol normalized in A pts with MAP and PP reaching values similar to controls:

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	Group A		Group B	
	T0	T1	T2	
MAP (mmHg)	104±11.5*,**	95.6±10.4*	93.2±6.7**	91.9±9.9
PP (mmHg)	56.1±10.3++	54.1±10.4	52.6±9.8++	46.9±9.8

*P=0.0025, **, ++ P<0.05

During atenolol treatment BP no significant echocardiography, weight, hematology and biochemistry changes were noted. In stable dialysis patients, pulse pressure is related to age, THD, MSAP and AODs and when high (in hypertensives) is controlled by small intermittent doses of a beta-blocker.

Secondary hyperparathyrodism in patients on peritoneal dialysis: ultrasound examination of parathyroid glands and common biochemical markers of renal osteodystrophy

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PP

Renal bone disease affects the most of patients (pts) on chronic dialysis.The aim of the study was to examine the results of ultrasound examination of parathyroid glands (PG) and some common biochemical markers of renal ostheodystrophy in a group of pts affected by end-stage renal failure of different leading cause on continuous ambulatory peritoneal dialysis (CAPD). We evaluated the following biochemical markers of bone disease: serum level of intact parathyroid hormon (iPTH), serum calcium (Ca), serum phosphate (P) and alkaline phosphatase (AP) in a group of 25 pts on CAPD. All of them performed 4 2-liters exchanges daily (dialysate with calcium concentration of 1,75 mmol/l) and most of them were substituted with calcium and vitamin D metabolites. The duration of CAPD program was 1 to 50 months. The control group was composed of 10 pts on chronic hemodialysis (HD, treatment duration 1 to 14 months). US examination revealed that 48% of pts on CAPD had one of more PG enlarged, and 12% of them had 3 PG enlarged. In the control group, 70% of pts had one or more PG enlarged, and 20% of them had 3 PG enlarged. Laboratory findings were the following (mean+/-std):

Ca	(mmol/)	P (mmol/l)	AP (U/l)	iPTH (pg/ml)
HD	2.29+/-.18	1.18+/-.3	94.3+/-12.9	128.86+/-40.5
CAPD	2.21+/-.30	1.97+/-.5	78.0+/-10.5	253+/-118

Our results confirm that secondary hyperparathyrodism is often present in pts on CAPD. In spite the worse ultrasound findings in pts on HD, pts on CAPD had signifficantly higher iPTH levels (p<0.01), possibly because of the longer time spent on depuration program.

Our experience with pre-emptive kidney transplantation

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PP

Kidney transplantation is a method of choice in the treatment of patients with ESRD. In many transplant centers during last several years pre-emptive kidney transplantation is introduced as an atractive option. This option is particularly acceptable for childrens, diabetics ant patients with insufficient vascular access for dialysis. In the developing countries there are additional reasons for pre-emptive kidney transplantation including low quality of dialysis, high-risk of infections with hepatitis viruses and alloimunisation with blood transfusions, overloading of dialysis centers and more acceptable farmacoeconomic aspect of treatment. In this paper we report our initial experience with pre-emptive kidney transplantation. Fifteen (9 male and 6 female) out of 122 patients in our transplant unit received their first graft without prior dialysis. In order to evaluate the outcome of pre-emptive kidney transplantation, this group was retrospectively compared with 15 patients who received their graft after varying period of hemodialysis. The pre-dialysis group did not differ from the post-dialysis group in respect of age, sex, HLA mismatch, donor source and immunosuppressive regimen. All patients received graft from living related donors. Triple immunosuppressive therapy including steroids, cyclosporine and mycophenolate mofetil was used in all patients. The mean follow-up period was 18.4 months. One-year patient and graft survival was 100% in both group. The acute rejection episodes were more frequent in post-dialysis group (40% vs. 15.3%)(p>0.05). Delayed graft function was noticed in 3 patients (20%) in post-dialysis group and in no one patients in pre-dialysis group ((p>0.05). In pre-dialysis group the lowe prevalence of hepatitis C infection (0 vs. 20%) and secondary hyperparathyreoidism (0 vs. 33.3%) (p<0.05) was noticed. No donor specific HLA antibody was found among these groups but PRA occured more frequently in post-dialysis group (20% vs. 0)(p>0.05). Based on our results, we concluded that pre-emptive kidney transplantation, while eliminating the cost, complications and inconvenience of dialysis, can be performed safely and effectively, as it does not pose any additional immunological hazards to allograft outcome.

The risk factors for end-stage renal disease in autosomal dominant polycystic kidney disease

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PP

The progression to renal failure in ADPKD patients (pts) is influenced by factors that are considered as risk factors. Pts with these factors may be those for whom therapeutic intervention would be of great benefit. We have studied those subpopulations with ADPKD with highest risk for ESRD. 200 ADPKD pts (mean age 48.5±12.2 years) were studied retrospectively during 15 years. Survival times were calculated as time to dialysis, transplantation or death. Risk ratio was calculated using the Cox proportion hazards model. 55 pts entered in ESRD and 34 pts died. PKD 2 subjects had longer renal survival than PKD 1 pts (median survival 58 vs 41 yr; $p<0.001$; risk ratio=2.3). Subjects who were diagnosed before age 30 and those who developed hypertension before age 35 had worse renal survival than those diagnosed after age 30 or those who remained normotensive after age 35 (age of diagnosis: 48 vs 60 yr; $p<0.0001$; risk ratio=3.6; hypertension: 50 vs 62 yr; $p<0.0001$; risk ratio=4.3). Treated pts with urinary desinfectants had a significant lower frequency of urinary infections than those untreated ($p<0.001$). Moreover, treated pts demostrated a slope of creatinine of 0.0007 vs 0.0148 of untreated pts ($p<0.001$). We conclude that the onset age of autosomal dominant polycyctic kidney disease influences its course; those subjects diagnosed later in life have more benign course disease than those diagnosed earlier. It is very important to diagnose and to treat hypertension and urinary infections early in the course of this disease.

The influence of gross hematuria to the progression of autosomal dominant polycystic kidney disease

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PP

Gross hematuria has been commonly reported in autosomal dominant polycystic kidney disease (ADPKD). It is not only common but it can trigger the diagnosis in 13% to 23% of adult ADPKD subjects, influencing to renal dysfunction. In a longitudinal study we evaluated the influence of hematuria in the progression of renal failure in ADPKD patients (pts). 100 ADPKD pts (mean age 48.5±12.2 years) were studied for 5 years. Pts were considered to have gross hematuria if they gave a history of observing blood in the urine and microhematuria if the urinalysis showed up to 5 rbc/hpf. Survival times were calculated as the time to renal replacement therapy or time of serum creatinine value up to 10 mg/dl. Kaplan-Meier product-limit survival curves were constructed, and log rank test was used to compare the survival curves. Gross hematuria was present in 83 pts (83%): 45 pts were females (45%) (9 of them underwent to renal loss), and 38 were males (38%) (8 of them underwent to renal loss). In 38 pts hematuria was diagnosed before age 30 (38%), while in 45 pts hypertension was diagnosed after age 30 (45%). Having at least one episode of gross hematuria before age 30 was associated with a worse renal survival than not having had such an episode (10-year difference in renal survival; $P < 0.001$). The difference in survival for those who had gross hematuria before age 30, compared with those who did not have this experience, was significant either for women or men (respectively the difference in renal survival 9-year, $P < 0.001$ and 12-year, $P < 0.001$). These data suggest that patients with recurrent episodes of gross hematuria may be at risk for more severe renal disease since the mean age of the first episode of hematuria occurred on average at 30 years, considerably earlier than renal functional deterioration occurs.

The right to choose of patients with chronic renal failure

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PP

The study examines 31 patients Chronic Renal Failure, who will be on dialysis (haemodialysis or peritoneal dialysis). The average age of men is 51,94 and average age of women is 55,73. The average age duration of the kidney disease, which leads to Chronic Renal Failure and dialysis, is 7,53 years for men and 12.40 years for women. The psychical status was valued by standardized psychometric method "General Health Questionnaire" by Goldberg (translated and adapted into Bulgarian by T. Trifonova). Laboratory measurements are made like creatinin ect. A training program "The right to choose" was conducted to all after the evaluation of psycho-emotional status. The program includes: Knowledge for the renal function; The reasons for the Chronic Renal Failure; The chance for treatment of Chronic Renal Failure; The similarity, differences and priority of the dialysis treatment at haemodialysis or peritoneal dialysis; The stage of adapting to dialysis; The relatives of the patients and dialysis, psychiatric help for them; The restrictions for patients at dialysis treatment; psychotropic medicines and Chronic Renal Failure; Renal transplantation and Donors. The most frequently found complaints of the patients are highly expressed anxiety. The unknown "dialysis" scares the patients. Depression was diagnosed at 1 men and 2 women. Antidepressants were given to 1 men and 1 women. Sleeping disorders were found at 12 men and 14 women, to 3 men and 7 women from them were given ben-

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zodiazepines and to 1 men and 1 women nonbenzodiazepines.

Sleep disorders in chronic kidney defficiency patients on haemodialysis.

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PP

The study examines 31 patients (18 men and 13 women) with chronic kidney defficiency treated with haemodialysis. The average age of men on haemodialysis is 53,94 years. The average age of women on haemodialysis is 53,61 years. The average age dialysis duration for men on haemodialysis is 66,22 months. The average age duration for women on haemodialysis is 58,38 months. A standardized psychometric method – "General Health Questionnaire" by D. Goldberg was used in this study. Benzodiazepines were given to 9 men (50,00±11,79%) and 8 women (50,00±11,79%) for sleeping disturbances before the present study. The sleeping disturbances were very highly expressed at 3 men (16,67±8,78%) and 2 women (15,38±10,01%) for whom it was necessary several psychotropic medicines to be combined. The most frequently shared complaints before the study was "You have got difficulties when falling asleep" 13 men (72,22±10,56%) and 10 women (76,92±11,69%); "You awake up early and can't fall asleep again" 11 men (61,11±11,49%) and 9 women (69,23±12,80%). These complaints have reduced after the treatment. Stilnox (Zolpidem INN) 5mg was applied to patients with sleep disorders at bedtime for 14 days. Six of the patients (19,35±7,10%) needed more Stilnox, so we added 10mg to them at bedtime.

New approaches for histocompatibility matching in kidney transplantation

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OP

Application of DNA methods revealed that the HLA system is more polymorphic than initially accepted and new approaches for histocompatibility matching in kidney transplantation are required. The aim of the present study was to assess the probability to find HLA matched donors for kidney recipients using different selection criteria. HLA class class and I II allele and haplotype distribution was analyzed by PCR-SSP method in 554 patients, potential recipients for kidney transplantation. HLA specificities were determined at two levels: allele groups and structural level (triplets). Our results showed no statistical significant differences in distribution of HLA-A, -B, -DRB1 and –DQB1 allele groups between the patients and the general Bulgarian population although rare specificities such as A*36, *66; B*46, *47, *48, *54, *78; DRB1*09, *12 were detected in the patients group. Investigation of haplotype distribution indicated significant heterogeneity due to the prevalence of rare haplotypes (79.1%). Statistically significant differences compared to the healthy subjects were also observed. Analysis of probability to find HLA matched donor using conventional criteria and a triplet algorithm did not show a significant difference. However, for patients with rare for our population alleles and haplotypes and for sensitized patients HLA matchmaker algorithm increased significantly the probability to find a suitable donor. These observations were due to identification of additional matched at structural level HLA specificities. In conclusion these results demonstrate the impact of alternative criteria for donor/recipient matching at HLA structural level and could be used in a revised strategy for selection of donor/recipient pairs in kidney transplantation.

Excellent results of living unrelated renal transplantation: a single center experience

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OP

The increased incidence of end-stage renal disease in the region,the growing organ shortage and the lack of any cooperation and organ sharing among the Balkan countries, led us in 1998 to begin accepting highly motivated, unrelated living kidney donors who had a strong emotional bond with the recipients.From June 1998 to October 2002, 11 living unrelated renal transplantations (LURT) were performed in our center.As suitable donors were accepted:9 spouses (7 wives and 2 husbands), one brother-in-law and one mother-in-law (Group I, LURT). The rsults were compared with 32 living related transplantations (Group II,LRT), performed in the same time. The unrelated donors were accepted only with ABO compatibility and negative cross match. According to the actual law in the country,both,donor and recipient did the formal consent in front of judge. The ethical Committees of Doctor's Chamber and Ministry of Health were included in the final decision of acceptance, too. Mean donor's age in Gr.I was 36.4 (range 32-55) and 62.4 (range 45-78) in Gr.II($p<0.001$). The Immunosuppression included a quadruple sequential protocol with Il-2R antagonists induction, late Cyclosporin A nd Mycophenolate Mofetil and Prednizolon as a maintenance therapy. One year graft survival, rejection episodes,delayed graft function (DGF) and actual serum creatinin were analysed. One death and graft loss during the first year was noted in Gr.II and none in Gr.I. DGF was observed in 8 patients (one in Gr.I and 7 in

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Gr.II)which is understandable bearing in mind the advanced age donors in Gr.II. The one-year graft survival was 100%in Gr.I and 95% in Gr.II. Seven biopsy confirmed rejection episodes were observed(2 in Gr.I and 5 in Gr.II) all solved by standard steroid pulse therapy. The actual mean serum creatinin level is 101+22 and 162+34 in the Gr.I and II, respectively. Data presented in the study fully justify the use of living emotionally related kidney donors. LURT actively encouraged to help alleviate the current organ shortage in the Balkans.

What is the relationship between anemia ipth and acido-basis status in our dialysis patiens

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PP

Analysis was performed at group of 30 patients – 13 females and 17 males, average age 49 years (range of 24-68), average dialysis duration 48 months (12-156 months), during the period of 6 months (November 2002 – April 2003). Basic kidney disease: - unknown nephropatia - 5 patients; - gllomerulonephritis - 11 patients; - hypertension - 4 patients; - diabetic renal disease - 5 patients; - polycystic kidney disease - 1 patient; - vasculitis - 2 patients; - balcan endemic nephropatia - 1 patient; - tubulointerstice disease - 1 patient. In the observed group we found that: Hgb > 10 mg/dl had 50% of females and 30% of males. - desirable level of iPTH / 300 had 65% of patients; - 300 – 600 had 13% of patient; - 600 – 1000 had 19% of patients; - >1000 had 3 % of patients; product Ca x PO 4: >6 had 9 patients; <6 had 21 patients; metabolic acidosis pH<7,32 had 10 patients; normal pH>7,32 had 20 patients; level PO4 – increased in group with and without acidosis in the same percentage – 30%; normal PO4 and normal pH had 8 patients; normal PO4 and moderate acidosis had 2 patients. Comparing the obtained parameters, we conclude that considerably larger number of males had distinctive anemia; patients with metabolic acidosis in larger percentage had product Ca x PO4 more then 6 and level iPTH for 2 or 3 times larger then desirable. Level of iPTH correlates with dialysis duration – meaning gllomerulopathia is dominant as primary disease. We have not found convincing correlation between level of iPTH and anemia, which could be possibly explained by applied substitutional therapy with rHu EPO and i.v. iron. Hyperphosphatemia could be ascribed to irresponsible diet and absence of appropriate phosphate binders and unprompt starting with adequate therapy.

Whether the cardiovascular risk factors in uremia patients differed from those in general population?

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PP

High incidence of cardiovascular disease (CVD) in hemodialysis (HD) patients (pts) is caused by a higher prevalence of traditional risk factors, but the role of risk factors specific for uremia and HD have been stressed recently. Most of the specific risk factors may induce close independent links between atherosclerosis (a-scl) and inflammation as well as malnutrition. With the aim to find out the most important risk factor for a-scl in HD pts, association between different risk factors and intima-media thickness (IMT) and plaque score (PS) in the common carotid arteries (CCA) was evaluated. The analysis involved the following groups of factors: age, lipidemia and diabetes as traditional risk factors, homocystein, HD duration, albuminemia, CRP as risk factors specific for ESRD and inflammation, but BMI and body fat (BF) as nutritional markers. The study included 127 pts (62 male, aged 55.3±13 years), maintained by HD (77.2 ±56.5 month) at our Institute. Among them, 85% had hypertension and 29% CVD. B-mode ultrasonography was used for assessment of IMT and PS (0-3) in the CCA as a-scl indices. In multivariate analysis, IMT left was significant associated with age ($p<0.000$), HD duration ($p<0.045$), BF ($p<0.029$) and diabetes ($p<0.005$), IMT right with age ($p<0.000$) and BF ($p<0.05$), PS left with age ($p<0.000$) and diabetes (0.001), and PS right only with age (0.000). In conclusion, age induced the closer link with the a-scl indices in our HD pts in addition to diabetes and BF. The question arises whether the CV risk factors in uremia differed from those in general population.

Focal-segmental glomerulosclerosis. Clinico-morphological correlation

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PP

FSGS composes 10% of all glomerulonephritis, but its importance comes from its fast progression to end-stage renal failure as well as poor response to corticosteroids. In the period from 1996 to 2001, 508 renal biopsies were performed at our Clinic, and FSGS was found in 51 (10%) cases. Diagnosis of primary FSGS was established in 20 patients

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(pts) (10 women and 10 men) aged between 22 and 65. In this group clinical findings, laboratory and pathomorphological changes were analyzed. For pathomorphological analysis we used semiquantitative scores to evaluate indexes of glomerular sclerosis, blood vessel and tubulointerstitial changes, and activity and chronicity of the disease. Analysis of clinical features and laboratory findings revealed that all pts had proteinuria, one half of pts had hypertension and leucocituria, 14 pts (70%) erythrocituria, 7 pts (35%) cilindruria and 14 pts (70%) impaired urine concentrating ability. Sixty percent of pts had reduced creatinine clearance (< 80 ml/min) and 85% of pts had hypercholesterolaemia, hypertriglyceridaemia and hypoproteinaemia. Immunological analyses revealed: decreased IgG and C3 in 20%, and IgM and C4 in 10% of pts; increased CIC in 10% and ANA in 15% of pts. Pathomorphological analysis showed changes on glomeruli, moderate tubulointerstitial changes, and mild blood vessel changes with higher index of chronicity than activity. Positive correlation was found between serum creatinine levels and interstitial infiltration, interstitial fibrosis and tubular atrophy ($p < 0.01$). Present study confirmed our previous results that FSGS comprised about 10% of primary glomerulonephritis and that in spite of severe glomerular changes renal function correlated significantly only with tubulointerstitial indexes.

Pulse pressure and risk of cardiovascular events and mortality in patients on hemodialysis

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OP

Over the years, diastolic-, systolic- and pulse pressures have successively been entered into equation for cardiovascular (CVS) risk. In recent studies PP has been shown as a risk factor for CVS events or total mortality. In this study we analyzed 94 patients (52 men and 42 women) in average age 57.84±11.62 years, who were on chronic hemodialysis in our Center during a period of 7 years. Comorbid conditions were indexed using IDS (index of disease severity) and cardiovascular components of this index were also included in the analysis [ischaemic heart disease, congestive heart failure, arrhythmia, other cardiovascular diseases (OTH) mainly dependent of left ventricular hypertrophy (LVH), hypertension (HTA) and total CVS morbidity]. We analyzed correlation between average values of blood pressure components: diastolic- (DBP), systolic- (SBP), median arterial- (MAP) and PP and these individual comorbid CVS components as well as total CVS morbidity, IDS, hemoglobin (Hb), serum calcium, phosphate (PO4), albumin, body mass index, Kt/V(Daurgidas), age, as well as mortality. The analysis revealed: significant positive correlation between PP (0.021) and SBP (0.012) and total CVS morbidity, PP (0.009) and SBP (0.051) and OTH with LVH, all blood pressure components and HTA, all blood pressure components and serum PO4, PP (0.022) and SBP (0.041) and total IDS; significant negative correlation between PP (0.049) and Hb, MAP (0.029) and age. Cox proportional hazard model did not reveal PP, SBP, DBP and MAP as mortality risk factors in this group of hemodialysis patients. So, we can conclude that PP was a good predictor of total CVS morbidity, LVH, total IDS and anemia (Hb), but it was not predictor of mortality in our analyzed patients.

Residual renal function, nutritional status and anemia in patients on peritoneal dialysis

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PP

Malnutrition and anemia are common in patients (pts) on continuous ambulatory peritoneal dialysis (CAPD), and they are associated with simptoms and outcome on dialysis. In the light of recent observations that survival on CAPD is associated with residual renal function (RRF), we examined the correlation between RRF and common markers of nutritional status and blood count in a group of pts on CAPD during a 6-months follow-up. We followed 32 pts affected by end-stage renal disease of different leading cause. The pts performed four 2-liters exchanges daily and were advised for a diet with 30 kcal/kg and 1 g protein/kg/day. Some of them were substituted with iron, epo and blood transfusions, and some had one or more episodes of peritonitis. We assessed: RRF, normalized protein catabolic rate (nPCR), hemoglobin, hematochrit, total serum protein (TP), albumin (SA), transferin, cholesterol, skinfold thickness of the common points (TN, BN, SSN, SIN), mid-arm circumference (MAC), middle-arm muscle circumference (MAMC), weight, body-mass index, percentage of body fat (F%), subjective global assessment score (SGA) 7 days, 3 months and 6 months after the beginning of CAPD treatment. The correlations between RRF and markers of blood count and nutritional status were evaluated by the Pearson's correlation test. During the follow-up, nutritional status and anemia improved in our pts, nevertheless RRF slightly decreased. At the beginning of CAPD treatment, we found significant positive correlations between RRF and TP, SIN and weight. After 3 months, there were significant positive correlations between RRF and SSN, hemoglobin, SIN, weight, nPCR and SGA; and 6 months later, there were significant positive correlations between RRF and MAC, weight, F%, nPCR, SGA, hemoglobin, TP, TN, SIN, SSN. The number of positive correlations increased during the follow-up, while we found no negative correlations between RRF and markers of anemia and nutritional status in our pts. We can conclude RRF positivelly influenced nutritional status and blood count in our pts.

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Anemia in chronic renal insufficiency: importance of the underlying renal disease and factors of comorbidities

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PP

Anemia is an early complication of chronic renal failure (CRF), that most commonly results from a combination of erythropoietin deficiency and anemia of chronic disease. Patients with CRF have a normochromic, normocytic anemia accounted for by erythropoietin deficiency, although other aggravating causes of anemia (including iron deficiency) may occur in CRF patients. On the other hand, anemia of chronic disease is caused by cytokine-mediated suppression of erythropoiesis secondary to chronic infection, inflammation and neoplasia. We performed a retrospective cohort study to determine the degree of anemia corresponding to the decreasing levels of renal function in patients with CRF, and to identify the other factors associated with the anemia in these patients. The CRF cohort was composed of 133 adult patients (70 females and 63 males, mean age 66.2 ± 11 years), who were divided in four groups according to the calculated creatinine clearance (CCr): Group I with a CCr 60-89 ml/min, group II with a CCr 30-59 ml/min, group III with a CCr 15-29 ml/min and group IV with a CCr <15 ml/min. Statistical analysis of the data used ANOVA, Pearsons correlation coefficient and multiple regression analysis. Oneway ANOVA was used to analyze the groupwise data. On groupwise analysis by CCr, there was a significant difference in the mean values of the ages ($p=0.001$), serum creatinine ($p<0.001$), haemoglobine ($p<0.001$) and hematocrit ($p<0.001$) between a different groups. The mean values of Hb were significantly correlated with the age ($p<0.001$), s-creatinine ($p<0.001$), CCr ($p<0.001$), DM ($p<0.001$), congestive heart failure ($p<0.01$) and ulcus ventriculi/duodeni ($p=0.001$). Using Hb, such as dependent variable in a stepwise multiple regression model, the best predictors were CCr ($r = 0.681$, $p = 0.000$), DM ($r = 0.715$, $p = 0.000$), s-creatinine ($r = 0.740$, $p = 0.000$) congestive heart failure ($r = 0.764$, $p = 0.002$), gender ($r = 0.780$, $p = 0.026$) and ulcus ventriculi / duodeni ($r = 0.791$, $p = 0.030$). This results show that anemia begins early in the course of CRI and it depends of clinical characteristics (gender), underlying renal disease (diabetes mellitus, autosomal dominant polycystic kidney disease) and factors of comorbidities (congestive heart failure, gastrointestinal bleeding). Detection, therapy or prevention of this conditions, and early treatment of anaemia is required.

Recurrence of primary disease and kidney transplantation

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PP

All forms of glomerulonepritis (GN) may affect the allograft, although the risk of relapse is different in various types of GN and appears to be higher when the course of the underlying nephropathy is rapid. We analyzed 8 patients (age 37.1+7.1 yrs) subjected to transplanted kidney biopsy in whom the pathophysiological (PH) findings showed glomerulonephritis. All pts were on hemodialysis before transplantation for an average of 35.5+9.4 months. In 3/8 pts the underlying disease was confirmed upon biopsy (2 FSGS, 1 MPGN). Five pts received kidney from the living sibling donor, and 3 from cadavers. Protocol for high immunological risk was applied in 1 pts who had increased MCL reactivity level, while other received conventional immunosuppressive protocol. The time interval between transplantation and biopsy was 480 days in average. PH findings showed FSGS in 3, MPGN in 3 proliferative GN in 1 and membranous GN in 1 pts. The patients were followed for 2-5 years. After the first year from the transplantation 5/8 had s-Cr level above 150 μmol/L, after the third year 4/6 and after 5 years 1/2 pts. Two pts died with functioning grafts, 1 pts had a loss of graft function and died from sepsis. Clinical monitoring and biopsy of the transplanted kidney enables recognition of the recurrent or de novo kidney disease and is an important for an early start of the adequate therapeutic measures aimed at improvement of graft survival.

Is intravenous iron administration safe enough in haemodialysis patients with HCV seropositivity?

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PP

Iron supplementation and recombinant human erythropoietin (rhEPO) administration are the cornerstones of anaemia management in HD patients. Inadequate iron supply and inflammation are main causes for suboptimal response to rhEPO. HCV seropositivity is very prevalent among HD patients and it may be another stimulus for chronic inflammatory state. This may alter anaemia management either by increased adverse effects to IV iron supplementation or by hyporesponsiveness to rhEPO due to chronic inflammation. Sixty-one maintenance HD patients (24 F, 37 M, mean age 48±13 yrs, on dialysis for 76±73 mo) who were on oral iron

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supplementation but having suboptimal response to rhEPO administration were switched to IV iron therapy. All patients were screened for HCV serology by ELISA II. Patients received 100 mg/session IV iron sucrose during the first month and then the dose was decreased to 50-100 mg weekly or biweekly to keep ferritin levels between 300-700 ng/ml. Patients were followed for haemoglobin (Hb) response, ferritin levels, transaminase changes and rhEPO dose requirements for 4 months. Twenty-nine patients were HCV (-) and 32 were HCV (+). Baseline demographic and clinical characteristics, as well as Hb, ferritin, ALT, AST levels and rhEPO doses were similar in both groups. Both groups have received same amount of IV iron (2100±750 mg vs 2100±1100 mg, p>0.05) in 4 months time. After 4 months, significant increase was observed in ferritin (173±133 to 536±319 ng/ml) and Hb levels (9.3±1.2 to 10.8±1.19 ng/ml) in both groups and there is no difference between two groups. rhEPO dose decreased after IV iron treatment and HCV seropositivity did not alter rhEPO requirements. Three months after IV iron administration, ALT and AST levels increased significantly only in HCV(+) positive patients (ALT: 28±16 U/L to 37±22 U/L, p<0.01; AST: 22±9 U/L to 27±14 U/L, p<0.01), but not HCV seronegative patients. This study has shown that IV iron administration reverses suboptimal response to rhEPO administration in HD patients. Although HCV seropositivity does not alter Hb or ferritin response and rhEPO requirements after IV iron therapy, it causes little but still significant increase in serum transaminase levels. This may be deleterious in the long-term management of HCV (+) patients.

Assessment of myocardial perfusion with Tc-99m-MIBI spect: association with cardiovascular disease markers in haemodialysis patients

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OP

Early detection of cardiovascular disease (CVD) is very critical in haemodialysis (HD) patients, especially in asymptomatic cases. Technetium-99m-MIBI dobutamine-stress myocardial perfusion single photon emission computed tomography (Tc-99m-MIBI SPECT) is a reliable non-invasive screening test for myocardial ischemia. The aim of this study is to assess the association between Tc-99m-MIBI SPECT and other CVD risk factors in maintenance HD patients. 25 asymptomatic patients (8 F and 17 M, mean age: 44±9 years, on maintenance HD for 77±64 months were included. All patients were asymptomatic and had normal resting electrocardiogram (ECG). Serum levels of homocysteine, soluble cellular adhesion molecules (sCAM) (sVCAM, sICAM, sP-selectin, sE-selectin), lipids, apolipoproteins, calcium, phosphorus, C-reactive protein (CRP) and albumin were assessed as CVD markers. Intima media thickness (IMT) of common carotid artery (CCA) was measured with B-mode ultrasonography as a noninvasive marker of atherosclerosis. All patients had 24-hours ambulatory blood pressure monitoring and were screened with Tc-99m-MIBI SPECT. Tc-99m-MIBI SPECT test was positive 7 patients, whereas 18 patients were normal. Tc-99m-MIBI SPECT (+) patients had higher IMT of CCA (0.87±0.24 vs 0.59±0.13 mm, p<0.01), higher CRP and homocysteine levels (0.84±0.95 vs 0.38?0.32 mg/dL and 21±5.4 vs 31±8.8 µmol/L respectively, p<0.05), higher serum levels of sVCAM (1441±176 vs 799?299 ng/ml, p<0.01), sICAM (1370±253 vs 872±204, ng/ml, p<0.01), sP-selectin (358±136 vs 231±90 ng/ml, p<0.01) and sE-selectin (229±121 vs 58±48 ng/ml, p<0.01) and higher calcium x phosphorus product (52±6.9 vs 38±5.7 mg2/dl2, p<0.01). 24-hours ambulatory blood pressure readings were not different between two groups of patients. Serum levels of lipids, apolipoproteins and albumin were also not different between two groups. Early detection of CVD is very important in order to prevent future morbidities and mortality. This study has shown that Tc-99m-MIBI SPECT test may be predictive of future cardiovascular diseases especially in patients with a high burden of cardiovascular risk factors.

Obesity in haemodialysis patients: is it an innocent phenomenon?

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PP

Obesity is a cardiovascular disease (CVD) risk factor in general population. Haemodialysis (HD) patients, however, are prone to malnutrition and impact of obesity on cardiovascular outcome is controversial. The aim of this study was to assess the association CVD markers with anthropometric measures in HD patients. Eighty-three maintenance HD patients (45 M, 38 F, mean age: 48±14 years, on dialysis for 73?16 mo) were included. Patients were divided into two groups according to their body mass indexes (BMI): Normal (BMI:18.5-25, n=52) and overweight and obese (BMI: 25-35, n=21). Clinical data for serum albumin, CRP, prealbumin, homocysteine, lipids and apolipoproteins were collected from the medical records of preceding 6 months. Common carotid artery (CCA) intima media thickness (IMT) and 24 hours ambulatory blood pressure measurements were done in all patients. Following anthropometric variables were determined: Body mass index (BMI), triceps skinfold thickness (TST), midarm muscle circumference (MAMC), waist (WC) and hip circumference (HC). Serum levels of CRP (1.4±1.1 vs 1.1±1.0 mg/dL), prealbumin (36±6 vs 30±7 mg/dL), homocysteine (29±8 vs. 25±7

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µmol/L) and apolipoprotein B100 (86±17 vs 73±21 mg/dL) levels were significantly higher in overweight and obese patients compared to normal HD patients ($p<0.05$), while serum albumin levels were similar (3.8±0.3 vs 3.7±0.3 g/dL). WC was positively correlated with triglyceride ($r=0.33$, $p<0.05$) and apolipoprotein B100 levels ($r=0.33$, $p<0.01$). HC was positively correlated with total cholesterol ($r=0.29$, $p<0.05$), triglyceride ($r=0.28$, $p<0.05$) and apolipoprotein B100 levels ($r=0.30$, $p<0.05$). MAMC was positively correlated with triglyceride ($r=0.24$, $p<0.05$) and apolipoprotein B100 levels ($r=0.24$, $p<0.05$). Mean IMT of CCA was higher in obese and overweight patients compared to normals (0.78±0.3 vs 0.62±0.21mm, $p<0.05$). No difference was observed in ambulatory blood pressure readings between two groups. Obesity is usually accepted as a defending factor against mortality in HD patients. This study, however, showed that obese patients had a higher inflammatory load along with hyperlipidemia and increased risk for carotid atherosclerosis. The role of obesity in development of cardiovascular morbidity and mortality in HD patients deserves a special attention.

Mutation analysis of BBS2 and BBS6 genes in family affected by Bardet-Biedl syndrome in northern Greece

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PP

Locus heterogeneity in Mendelian disorders is the phenomenon whereby mutations in different genes result in a similar or identical clinical phenotype. Bardet-Biedl syndrome is a typical example of a group of rare disorders inherited as autosomal recessive genetic traits with heterogenous phenotype. Major features of these disorders may include mental retardation, obesity, delayed sexual development or underdeveloped reproduction organs, pigmentary retinopathy, kidney abnormalities in structure or function, polydactyly and other additional features such as asthma and diabetes mellitus. At present 6 different genes responsible for BBS have been "mapped" or located to specific chromosomal regions. In our study BBS2 and BBS6 gene loci were analyzed for known or unknown mutations in family affected by Bardet-Biedl Syndrome. Genomic DNA was extracted from whole blood by the phenol- chloroform protocol. Detection of mutations was carried out using specific digestion of the PCR products with restriction enzymes. Our results show that the heterogeneity in BBS phenotype may be the result of interaction between genotype at multiple gene loci. In addition we believe that in these multigene disorders the complete knowledge of variations across the candidates genes make it possible to test the hypothesis that the combination between mutations from different genes, reflect the final phenotype.

Loneliness and depression in caregiver of Turkish patients with continous ambulatory peritoneal dialysis

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PP

Introduction: It is important to participate the family or caregiver to the care for meeting the physical and/or emotional needs of the patient. For these persons, such factors as being responsible in care of a chronic illness, inability, role changes and his/her own health problems can cause psychological feelings such as loneliness and depression. By assessing patients and those who participated to care, nurses can supply to individualized and holistically care for each patient. Aim: To investigate experience of loneliness and depression in caregiver of Turkish patients' with CAPD. Method: Sample of the study consisted of 65 caregivers of patients treated with CAPD. The study was carried out in Dialysis unit between 1st March and 31st May 2003. Data were collected through interviews by using the UCLA Loneliness Scale, the Beck's Depression Scale and Demographic Data Form. Findings: 81.5% of caregivers were female. The mean ages of the caregivers were 43.90±8.52, and 24.6% caregivers were illiterate. 93.8% of caregivers were married, and all were lived her /his partner, their child and parents. All the caregivers have social insurance. Level of loneliness of the caregivers was 28.3±4.96 points and didn't perceive loneliness. Level of depressions of the caregivers was 9.61±6.49 points and didn't perceive depression. However, there was a moderate positive association between perceived loneliness and depression ($r=0.346$, $p<0.01$). Conclusion: Findings of the study suggest that nurses need to be cognizant of patients' and caregivers' psychological reactions to CAPD, which may be expressed in feelings of loneliness and depression to provide individualized and holistically care and to promote coping for each patients.

Social support in Turkish patients with continuous ambulatory peritoneal dialysis and their caregivers

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PP

Introduction: By altering the lifestyle of the patients and

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family, continuous ambulatory peritoneal dialysis (CAPD) and chronic illness can create conflict, frustration, guilt, loneliness and depression. Previous studies in several population demonstrated that there was a strong relationship between perceived social support and coping with illness. Aim: To investigate perceived social support in Turkish patients with peritoneal dialysis and their caregiver. Method: Sample of the study consisted of 65 patients treated with CAPD and 65 their caregivers. The study was carried out in Dialysis unit between 1st March and 31st May 2003. Data were collected through interviews by using Social Support Questionnaire and Demographic Data Form. Findings: 26.2% of patients were female and 73.8% of patients were male. 81.5% of caregivers were female and 18.5% of caregivers were male. The mean ages of the patients and caregivers were similar (44.69±17.22, 43.90±8.52, respectively). 10.8% of patients and 24.6% caregivers were illiterate. 87.7% of patients and 93.8% of caregivers were married, and all lived with her/his partner, their child and parents. Both groups had social insurance. Level of perceived family social support was different for patients and caregivers with the means of 16.38±2.89 and 17.95±2.97 and respectively (t=-3.05; df 128; p>0.01). Level of perceived friend social support was different for patients and caregivers with the means of 11.52±4.71 and 14.23±3.46, respectively (t=-3.73; df 128; p>0.001). Conclusion: In the light these findings, we are considering that employed social support resources may be useful in patients with peritoneal dialysis and their caregivers to cope with her/him illness and to adapt needed lifestyle changes.

Is low calcium dialysate associated with a higher peritonitis rate in children undergoing chronic PD?

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PP

It has been reported that low calcium dialysate (LCD; ionized calcium concentration 1.25 mmol/L) is associated with a higher peritonitis rate than traditional dialysate (TD; ionized calcium concentration 1.75 mmol/L). The aim of this study was to compare the frequency of peritonitis in children undergoing chronic peritoneal dialysis(PD) with LCD and TD. The study included a total of 53 children (27 girls, 26 boys), 38 patients treated by TD (19 girls, 19 boys) and 15 by LCD (8 girls, 7 boys), aged 3 to 22 years (average 12.62±5.34 years). The mean duration on TD and LCD was 23.81±16.81 months (3 to 72 months) and 23.12±11.01 months(6 to 36 months), respectively. Among these 53 patients, 12 (22.6%) died; 8 (15%) received renal transplantation; 2 (3.7%) transferred to hemodialysis; 2 (3.7%) transferred to other hospitals; 1(1.8%) improved. Thus, at the moment, 28 children are still on chronic PD programme (19 on TD, 9 on LCD). The LCD group were previously treated by TD with a mean duration of 23.33±15.22 months (17 to 36 months). The results are expressed as mean values ± SD and statistical evaluation was made by student's t-test. The total observation period was 1563 pt-mos(170 pt-mos on LCD; 488 pt-mos on TD period of LCD; 658 pt-mos on TD) and the overall incidence of peritonitis was one episode (ep) /22.01 pt-mos (1/18.31 pt-mos on LCD; 1/29.1 pt-mos on TD period of LCD; 1/22.6 pt-mos on TD). Of these 53 patients, 14 had no peritonitis episodes, 39 patients had one or more episodes of peritonitis (total: 71 episodes). LCD was associated with a higher incidence of peritonitis than TD ($p<0.05$). In conclusion, patients on LCD have significantly higher peritonitis rate than TD patients.

Post-transplant diabetes mellitus and impaired glucose tolerance in pediatric renal transplant recipients

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PP

Background. Post transplant diabetes mellitus (PTDM) and hypertryglyceridemia are known complications of immunosuppressive therapy in pediatric renal transplant recipients (PRTR). The aim of this study was to find out the incidence of PTDM and impaired glucose tolerance and also the factors causing these complications. Material-Method. 29 (16 female, 13 male) non-diabetic/non-proteinuric renal recipients with ages ranging from 15.9±4.1(7,46-23,34) years that were transplanted between 1991-2002 were included. Mean duration time of tx was 2,7±2,9 (0,15-11,81) years. In the immediate post tx period, patients received induction immunosuppression. Maintenance immunosuppression continued with cyclosporin A, azathioprine and prednisolone. FK506 in 5 patients and mycophenolate mofetil in 3 of the patients were used.OGTT was used to categorize PRTR to groups with normal glucose tolerance (NGT), impaired glucose tolerance (IGT) or (PTDM) at least one month after transplantation. Results. Before renal tx 6,9 % of the patients' BMI SDS were below –2 and 6,9 % were above +2 SDS. After tx none of the patients BMI SDS were below –2 SDS. 41,4 % of the patients BMI were above + 2 SDS.The patients were divided into groups NGT and IGT/PTDM.20 % of all patients had IGT/PTDM. 7.1% (n=2) of the patients were categorized as IGT, 14,3 % (n=4) as PTDM. Insulin sensitivity measured with IR HOMA was impaired in 10 % of the patients.%39 of NGT and 16% of the IGT/PTDM patients had hyperglycemia during the first three months post-transplant. % 83.3 of the patients with IGT/DM were obese, %31.8 of the NGT had normal BMI. % 45.5 of the obese had impaired IR HOMA and % 29. 4 had normal IR

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HOMO. 33 % of the IGT/PTDM patients had increased cholesterol levels. 50 % of NGT patients had increased cholesterol levels.83,3 % of the IGT/PTDM had increased triglyceride levels and 76.2 % of the NGT had increased levels of triglyceride. 80 % of the impaired IR HOMA patients had increased triglyceride levels. 75 % of the normal IR HOMA patients had increased triglyceride levels.30% of the impaired IR HOMA patients had increased cholesterol levels. 52,9 % of the normal IR HOMA patients had increased triglyceride levels. Conclusion. Nearly 20% of IGT was encountered in PRTR though this was less in adults. Though obesity was seen due to immunosuppressive theraphy, hypertryglyceridemia may also accompany. PRTR should be followed by postprandial serum glucose and insulin levels (OGGT) in order to avoid complications dealing with obesity and hyperlipidemia.

Risk factors for renal scarring in patients with urinary tract infection and vesicoureteral reflux disease

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PP

Urinary tract infections (UTI) cause severe morbidity as renal scarring that ends with chronic renal insufficiency. Renal scarring is generally due to vesicoureteral reflux (VUR) in UTI. Hereby, the ratio of renal scarring and factors as leading cause of this disease were aimed to identify in patients with UTI. Material and Methods:60 girls and 30 boys with UTI and VUR were enrolled. Mean age for diagnose of VUR was 8±0.49 years (range1-21) and mean follow-up period was 3.78 years ±SEM 0.35.The period for age and diagnose ranged from 1 to 218 months(mean 38). The diagnose of VUR was confirmed by voiding cystourethrography (VCUG) in all patients. The grades for VUR were as: Grade I (n=4,3%),Grade II (n=28,20.7%), GradeIII (n=35,25.9%) GradeIV (n=16,11.9%) and GradeV (n=7,5.2%). Antibacterial prophylaxis were given for six months following 10-day eradication. 31(30%) patients underwent surgery. Average number of UTI was 2(0-10) in the follow-up period. Renal scarring was demonstrated with DMSA-Tc99m scintigraphy. All patients were evaluated in terms of age, sex, number of infections, reflux grade, renal scar, malformation, developmental retardation, time for application-age, period for diagnose-surgery. Malformations were as follows: Double collecting system (n=7), hypoplasia (n=11), posterior urethral valve (n=2), horseshoe kidney (n=2), hydronephrosis (n=3).Statistically significance was accepted for $p<0.05$ values. Results: Renal scarring was found in 44 (48.9%) patients; Grade I(0%),Grade II(16%), Grade III(33%), Grade IV(60%) and Grade V(100%). Time diagnose-operation ($p=0.0001$), number of infections ($p=0.026$), existence of malformation ($p=0.016$) and developmental retardation ($p=0.017$) were statistically significant. Rate of renal scarring was higher in Grade IV-V patients ($p=0.0001$). Higher grade of VUR was significant risk factor (OR:9.629, SE:0.534, $p=0.0001$).Incidence of UTI in patients with renal scar was significantly higher comparing to those with no scar ($p=0.026$). Where UTI (>3) increased 2.719 fold ($p=0.022$) the risk of renal scarring, existence of malformation increased 3.124 fold ($p=0.018$). Conclusion: Delay in onset of diagnose, frequent recurrence of infection (>3/6 month) in follow-up period and accompanying urinary system malformations facilitated the development of renal scarring.

Effect of erythropoietin on acid-base balance, potassium and phosphate in patients with chronic renal failure

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PP

Erythropoietin (rhuEpo) is used for the treatment of anemia in patients on hemodialysis or peritoneal dialysis. Some studies have reported that rhuEpo decrease both plasmatic and intraerythrocytic pH values. The metabolic acidosis influences the phosphate kinetic throughout the cell membrane. The aim of our study was to investigate the effects of rhuEpo on pH, potassium and phosphate in patients with different degree of chronic renal failure (CRF). Thirty-five CRF (20 male, 15 female) patients aged 25-75 years were studied for 6 months. Serum creatinine was 3.5±1.2 mg/dl. Twenty patients (group I) received rhuEpo, while the rest 15 (group II) did not. Renal function was the same in both groups at the beginning of the study. At the end of the study, hemoglobin increased in group I from 9.8±9.6 to 12.1±0.9 g/dl and in group II remained stable from 10.3±0.6 to 10.0±1.0 g/dl. Renal function reduced at the same degree in both groups (serum creatinine 4.5±1.9 vs 4.8±2.6 mg/dl). We did not observe any changes in pH in both groups but we observed a statistical significant increase in phosphate in group II (4.72±1.27 vs 4.15±0.96 mg/dl, $p<0.05$) while the plasma phosphate concentration in group I remained stable. In conclusion, the treatment with rhuEpo in patients with CRF does not affect the acid-base balance, but seems to keep stable the phosphate concentration (re-distribution) despite the reduction of renal function.

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Acute effect of heparin on lipid parameters in patients on renal replacement therapy

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PP

Previous studies have shown that dialyzer membrane and the type of heparin used can influence the lipid parameters. However there are limited and debatable data concerning the lipid alterations during a single HD session. Moreover the role of hemoconcentration in every HD session confuses the real effect of the above mentioned parameters on lipid profile. We undertook this study to investigate the acute effect of heparin administration on lipids in HD patients, but in a day out of HD, in order to eliminate any effect of ultrafiltration. We studied 6 patients on HD (group I), 6 patients on peritoneal dialysis (group II) and 6 healthy persons as controls (group III). The study was performed in two phases. In phase A we used unfractioned heparin [5000 IU, i.v.] while in phase B low molecular weight heparin [3500 anti-FXa, i.v.] was administrated. The lipid parameters (Total cholesterol, Triglycerides, HDL-cholesterol, LDL-cholesterol, Lp(a) and Apolipoproteins) were estimated before and 1,2,3 and 4 hours (time of standard HD session) after the heparin administration. We observed only a reduction (2nd and 3rd hour) in Triglycerides in both phases of the study (much more reduction in phase A). We did not find any other influence of heparin on lipid parameters, including Lp(a) in all groups. In conclusion: (a) both types of heparin seem to affect only the Triglycerides in patients on renal replacement therapy, (b) the alterations on lipid parameters observed during and after a dialysis session may be due to hemoconcentration.

Residual renal function and cardiovascular comorbidity in hemodialysis patients

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PP

It is well known that presence of residual renal function even at a low level, is associated with a lower mortality risk in hemodilaysis (HD) patients. In order to evaluate whether the presence of residual renal function is associated with lower cardiovascular comorbidity, we performed preliminary study on 20 hemodialyzed patients who still had residual renal function measured as residual urea clearance. The assessment of cardiovascular comorbidity was performed by indexing of cardiovascular components of index of comorbidity IDS-(index of disease severity): ischemic heart disease, congestive heart failure, arrhythmias and conduction problems, hypertension and other heart disease and conditions. There was no significant correlation between any cardiovascular component and the value of residual urea clearance. The only significant negative correlation was noticed between the duration of the treatment by hemodialysis before we analyzed data and value of residual renal urea clearance ($p<0.001$). It is necessary to evaluate more hemodialyzed patients with residual renal function with better estimation of comorbidity conditions and mortality in prospective study in order to make conclusions about the effects of residual renal functions on developing of cardiovascular comorbidity.

The influence of epoetin alfa on left ventricullar hypertrophy in patients with pre-dialysis stage of CRF

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OP

During the last ten years an important progress has been done in optimising the treatment of anaemia in CRI. The aim of the study was to evaluate the effect of the correction of anaemia in pre-dialysis stage of CRI with epoetin alpha (Eprex) on left-ventricular hypertrophy (LVH). A multicenter study was carried-out in 2001 – 2003 including 173 patients in pre-dialysis stage of CRI, 88 men and 85 women from 11 to 80 years old, mean age 52.7±11.3 years, with haemoglobin (Hb) levels < 110 g/l. Patients were followed-up during 9 month after the initiation of the treatment with Eprex. The mean basal Hb being 97.86 g/l, a significant increase to 117.44 g/l was observed at the 6th month of the study. At the end of the follow-up the mean Hb level was stable: 116.9 g/l. The mean initial dose of Eprex was 87 U/kg/week, with an important decrease of the required maintenance dose to 63.6 U/kg/week at the 6th months and to 60.3 U/kg/week at the 9th month respectively. On echocardiography, the end-diastolic diameter of LV and the LV muscle mass index decreased moderately. Moreover, a significant reduction of the end-diastolic diameter of the posterior wall of LV was observed: from 12.28 mm at the beginning to 11.70 mm at the 6th month. At the end of the study it reached 11.68 mm. The treatment with Eprex led to a satisfying correction of anaemia and to an important improvement of LVH.

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Acute and chronic effects of maintenance recombinant human erythropoietin therapy on cardiovascular disease parameters

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PP

Patients on long term hemodialysis have an increased risk of coronary artery disease, left ventricular hypertrophy, cardiac failure and death. Anemia is a significant risk factor for these complications. The treatment of renal anemia with recombinant human erythropoietin (rhuEpo) and consequent improvement of cardiac performance may reverse pathological changes in left ventricular geometry. In this study, we examined acute and chronic effects of rhuEpo administration on 24 hour blood pressure recordings and echocardiographic parameters in 30 rhuEpo-naive maintenance hemodialysis patients (14 F, 16 M, mean age 51±13 years, on hemodialysis for 52±9 mo). Echocardiographic examination and 24-hour ambulatory blood pressure monitoring (interdialitically) were done prior to, after 1 week and 6 months of rhuEpo administration (3x weekly, via sc route at a mean dose of 10000 U weekly). One week treatment of rhuEpo did not make any significant change in serum hemoglobin levels, 24 hour blood pressure recordings and echocardiographic parameters. After 6 months of therapy, serum hemoglobin levels increased from 8.8±0.6 to 10.8±0.7 g/dl. Echocardiographic examination revealed significant elevations in ejection fraction (61.9±8.9 vs 66.2±6.8 %) and fractional shortening (35.6±4.9 vs 38.9±6.3 %) with reductions in interventricular septum thickness from 1.21±0.16 to 1.00±0.16 cm and left ventricular mass index from 148.2±46.5 to 93.6±17.2 g/m2 ($p<0,05$). In 6 months time 24 hour blood pressure recordings however tended to be higher (Systolic: 125±21 mm Hg to 134±24 mm Hg and Diastolic: 78±15 mmHg to 84±15 mm Hg) but the difference was not significant. Our data indicate that partial correction of renal anemia with rhuEpo administration induce regression of left ventricular hypertrophy, improve cardiac performance but increase arterial blood pressure on long term therapy.

Correlation between the prevalence of anti-HCV positive patients and the number of received blood units and duration of hemodialysis treatment

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PP

Hepatitis C virus (HCV) infection is rapidly growing problem in dialysis patients. The seroprevalence in dialysis centers in Macedonia is about 90% (in the world 10 - 57%). HCV infection could be transmitted by blood transfusion and blood components and during dialysis procedure. HCV infection complications include: high prevalence of chronic hepatitis, progressive to cirrhosis and hepatocellular carcinom. The aim of this work is to present the correlation between the prevalence of anti-HCV positive patients and the number of blood transfusions, as weel as duration of dialysis treatment. In the study 112 pts on the chronic hemodialysis were examines (61 male and 51 female), aged 21-81 years, 83,03% were out patients and 16,97% of patients were hospitalized. The average duration of HD was 83,37 months (1,5 - 20 years) and the average received blood units was 12 (from 2 to 50). Micro ELISSA (Organon teknika) with UBI HCV EIA II generation was used. Of total 95 pts or 84,82% were anti-HCV positive. The correlation between the prevalence of HCV positive pts and the duration of HD treatment was significant by positive ($p=0.00017$). However, there was no correlation between the prevalence of HCV positive pts and the number of received blood units. It may be conclude that dialysis procedure as itself is the possible way of transmission of HCV infection, besides the possibility of transmission through blood and blood components. The fact that over 80% of pts are out patients is suggestive at other unknown ways of transmission. Dialysis pts belong to the highest risk group for HCV infection. Preventive measures and regular scrining are the imperative.

Clinical course of arterial tension during erytropoietin therapy

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PP

According to medical literature data, patients undergoing chronic hemodialysis program, during erytropoietin therapy can develop hypertension or aggravate already existing hypertension. Main objective of this paper is to analyze clinical course of arterial tension during erytropoietin therapy

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(rHu-EPO). For the period of January to May 2003. the total of 41 patients were examined of which 27 (65,85%) men and 14 women (34,15%), average age of 38.24±8.74, and average duration of dialysis 4.82±3.79 years,treated with regular hemodialysis three times per week, for 4 hours. Therapeutic dosage of rHu-EPO for subcutaneous application was 3x30 IU/kg/BW/week. The patients were divided into groups at the beginning of the trials:I hypotensive 6 (14.63%), II normal tensive without therapy 3 (7.31%), III normal tensive with therapy 32 (78.04%). Average values of arterial tension before the implementation of rHu-EPO therapy, of each group were: I (101.66/61.66), II (123.33/80,00), III (145.66/83.33)mmHg, and in the course of treatment with rHu-EPO: I (118.33/76.66), II (125.00/83.33), III (151.56/83.75) mmHg. In group III: with 7 (21.87%) patients, hypertension therapy needed to be corrected, with 2 (6.25%) patients therapy was aborted due to hypertensive crisis, while with 2 (6.25%) patients arterial tension normalized, and therefore they stopped using antihypertension therapy. Conclusion: rHu-EPO therapy had no significant influence to blood pressure level with normal tensive patients without treatment, whilst in the group of patients that were using antihypertension therapy in 28.12% cases the therapy effected the values, in concept of blood pressure elevation. In the group of hypertensive patients, the values of arterial tension have significantly approached normal values, which had effect on the quality of hemodialysis treatment.

Effect of HMG-CoA reductase inhibitors (statins) on bone mineral density in renal transplantation

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OP

Recent studies in non transplanted patients have suggested that HMG-CoA reductase inhibitors (statins) can increase the bone mineral density (BMD). The study objective was to determine if renal transplant patients on statins were more likely to retain a higher bone mineral density and lower risk of osteoporosis than patients not taking these drugs. In this case-control study, 23 transplanted patients on statins for 2.6±0.2 years (10 male, 13 female, mean age±SEM 43.6±2.0 years) and 30 patients (10 male, 20 female, mean age 43.2±1.3 years) who did not take statins were evaluated. All patients had serum Cr ≤2mg/dL (1.37±0.06) and serum Ca ≤5.5 meq/L (5.09±0.05). Both groups were given similar dosages of corticosteroids and calcineurin inhibitors, and have not different BMI (26.3±0.9 vs 24.8±0.7 Kg/m2, pNS). Comparison of these two groups showed a higher BMD of the spine in patients taking statins (Norland, L2-L4 0.925±0.034 g/cm2 vs 0.757±0.025 g/cm2, p=.00016). When men and women were compared separately between the two groups, those on statins had also higher BMD of the spine (p=.0151 and p=.0029, respectively). The mean difference was 0.022 g/cm2, about 5.6% higher BMD. The risk of osteoporosis (defined as a T-score ≤-2.5) in patients who received statins was approximately half (-1.48±0.26 vs -2.79±0.19, p=.00011, OR .55, 95% CI 0.15-1.93). In conclusion, the above findings suggest that statins seem to decrease osteoporosis risk in renal transplant recipients.

Post renal transplantation diabetes is associated with donor's HLA DR4 genotype

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PP

Post-transplant diabetes (PTD) is a relatively common complication in renal transplantation. In the general population the HLA haplotypes DR3-DQ2, DR4-DQ8 represent the strongest genetic risk markers for diabetes type I. The purpose of the present study was to investigate factors associated with the development of PTD including the HLA molecules in renal transplant recipients. In this case-control study, 15 patients with PTD (11 male, 4 female, mean age±SEM 57.5±2.3 years) and 17 consecutively transplanted patients who did not develope PTD (14 male, 3 female, mean age 53.8±2.1 years) were included. No difference was found between the study groups in age, gender, donor source or in the dosages of corticosteroids and calcineurin inhibitors. All patients had adequate renal function (serum Cr 1.5±0.1 mg/dl). Age, body mass index, high dose steroid use, family history for diabetes, hepatitis C, and HLA molecules were included as possible factors implicated for PTD. Patients with PTD had higher prevalence of donor's HLA DR4 (33.3 vs 5.9%, p<0.05, OR 8, 95% CI 1.03-62.03). Also, patients with PTD had higher prevalence of family history of diabetes (23.1 vs 5.9%, pNS), HCV seropositivity (20.0 vs 5.9%, pNS), and higher rate of steroid pulse therapy due to acute rejection (13.3 vs 5.9%, pNS), but the differences did not reach significant levels. Age and body mass index between groups were not different. In conclusion, in renal transplant recipients the donor's HLA DR4 seems to be associated with increased risk for post-transplant diabetes.

Bactrim-induced potassium disorders in hospitalized patients

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PP

Bactrim is a widely used antibiotic. It has a low cost and a wide spectrum of antimicrobial activity.Among its adverse reactions, hyperkalemia is little known It is thought that

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Bactrim-induced hyperkalemia is a consequence of inhibition of distal tubule potassium secretion . In order to determine the clinical effect of this disorder we tried to evaluate the possibility of hyperkalemia in patiens treated with standard- dose Bactrim. 92 pts with various infections were studied. 48 of them were treated with standard- dose Bactrim for 5-8 days.(1600 mg/d sulfamethoxazole and 320 mg/d trimethoprim). The remainder 44 pts formed the control group and they were treated with other antibiotics. The serum potassium concetration in the treatment group(mean+/-SD) was 3,79+/-0,38 mmol/dl (95% CI,3,71 to 3,87 mmol/l) .It increased by 1,42 mmol/l (CI,1,70 to 1,94 mmol/l) after Bactrim therapy. Pts with a serum creatinine level of 1,4 mg/dlor more developed a higher peak serum concetration of potassium [5,67+/-0,43 mmol/l (CI, 5,12 to 5,82 mmol/l)] than pts with a serum creatinine level of less than 1,4 mg/dl [4,81+/-0,41 mmol/l (CI, 4,79 to 5,03 mmol/l)]. The serum potassium concetration in the control group before therapy was 4,12+/-0,33 mmol/l (CI: 4,01 to 4,33 mmol/l) and it decreased in a non significant way after therapy. Our conclusion is that Bactrim therapy results in an increase of serum potassium conctration. This electrolyte disorder is more pronounced in pts with cronic renal insuficiency and we suggest that pts treated with Bactrim should be monitored closely for the development of hyperkalemia.

Early surgical revision of failed arteriovenous fistula increases early use and decreases the need for temporary catheters and construction of a new fistula

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PP

Arteriovenous fistula (AVF) is the most frequently used permanent vascular access in hemodialysis patients. The maturation of an AVF usually requires about 1-3 months. Thus, an alternative temporary method of vascular access must be used while the fistula matures. Delay in restoring access will result in the need for long-term/multiple temporary catheters and construction of a more proximal fistula. Three hundred twenty two AVF to 306 patients were constructed by the same vascular surgeon between November 2001 and February 2003. Fifty-three of these procedures to 53 patients (28 males, mean age 40±11years) were early surgical access revisions(16%). AVF which were constructed at least 3 months ago, with inadequate flow or thrombosis were accepted for early surgical revision. Duration of thrombosis ranged between 6 hours and 8 days. The process of early revision was as follows: a cutaneous incision was done 2-3cm proximal of the first anastomosis, vein was separated and thrombosis was extracted if present, then reanastomosis was performed. Revised fistulae were used after 1-7days. In 32 patients revised fistulae were used immediately at the next dialysis session; no temporary catheters were needed. In other patients femoral catheters were needed for a short term. In one patient early thrombosis was detected and embolectomy was performed, another patient developed late thrombosis and a new fistula was constructed. In other patients revised fistulae were functioning. In conclusion, early surgical access revision increases early use and durability of the fistula; besides decreases the need for temporary catheters and construction of a new and more proximal fistula.

Retrospective analysis of 322 native arteriovenous fistulae: 18-months experience

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PP

Arteriovenous fistulae (AVF) are the preferred type of permanent vascular access for hemodialysis because of low complication rates and long-term survival. In a retrospective analysis we evaluated the types, primary patency rate and complications of 322 AVF constructed by the same vascular surgeon in 306 consecutive patients (162 males; mean age 51±17 years, range 15-86 years) between November 2001 and February 2003. Patient characteristics and comorbid conditions related to vascular access procedure were evaluated. Radiocephalic fistulae was the most frequently used type of vascular access (272 cases) of which 72 snuffbox, 169 radial and 31 proximal radial localization. There were also 22 brachiobasilic, 25 brachiocephalic and 3 ulnarbasilic fistulae. Despite the high prevalence of comorbidities (diabetes 24%, cardiovascular 52%, neoplasm 3%), a native fistula was constructed in a majority (98%) of subjects. In 5 patients, AVF could not be constructed because there were no appropriate artery or vein for anastomosis. Early (postoperatively 48 hours) complications were thrombosis in 3 cases and bleeding that required surgical revision in one case. Late complications were thrombosis in 12 patients, inadequate flow in 4 patients, wound infection in 2 patients and one case of pseudoaneurysm. We concluded that a native arteriovenous fistula performed by an experienced vascular surgeon is to be considered as the first choice of vascular access in almost every dialysis patient regardless of age, gender and primary disease.

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ATR2 gene polymorphism in children with urinary bladder disfunction and upper urinary tract dilatation

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OP

Background: The RAS and ATR2 have been recognized to exert important roles in renal organogenesis. The ATR2 seems to be crucial for the normal development of the urinary tract. Children with urinary bladder dysfunction (UBD) usually have good clinical outcome, but some of them develop upper urinary tract dilatation. The aim of this study was to assess the effect of ATR2 A1332G gene polymorphisms on secondary development of upper urinary tract dilatation in children with UBD. Patients and methods: We examined 42 patient (pts) with UBD, 21 with and 21 without upper urinary tract dilatation and control group of 40 healthy persons. Genomic DNA was isolated by proteinase K/phenol extraction method and amplified by PCR. Results: Distribution of ATR2 genotypes was: 33.3% (AA), 26.7% (AG), 40.0% (GG) in female pts with dilatation; 16.6% (AA) and 83.3% (GG) in male pts with dilatation. In patients without dilatation genotype frequencies was: 42.9% (AA), 42.9% (AG) and 14.2% (GG) in females and 46.7% (AA) and 53.3% (GG) in males. There were significant differences ($p<0.05$) in ATR2 genotype distribution between both male and female patients with dilatation comparing to male and female patients without dilatation. Conclusion: Our results suggest possible role of ATR2 A1332G gene polymorphism on the development of upper urinary tract dilatation in children with UBD.

Adequacy and morbidity in patients on maintenance hemodialysis

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PP

The goal of regular hemodialysis treatment is reduction of morbidity and mortality of pts on dialysis. There are many parameters concerning adequacy of dialytic treatment. One of the most used is Kt/V. The aim of the study is to examine the interrelations of Kt/V and morbidity in our patients on hemodialysis. There were 181 pts included in the study, mean age 54.5 yrs, for more than 3 months on dialysis mean 64 months. On the basis of Kt/V values the pts were divided in 3 groups: I – Kt/V<0.8 (31 pts or 17.1%), II – Kt/V=0.8-1.2 (112 pts or 61.9%), III – Kt/V>1.2 (38 pts or 21%). Morbidity was assessed through number of hospitalization days in the year. There were 38 pts with 331 days of hospitalization in one year. In the first Kt/V group there were 8 pts or 25.8%, it the second 18 pts or 16.1% and in the third group only 6 pts or 15.8%. Number of hospitalization days averaged to patients in the first group was 0.32, in the second 0.20 and in the third 0.15, which reached statistical significance ($p < 0.05$). Hospitalized pts were severe anemic (Hgb 73.8 g/L) matched with pts without hospitalizations (Hgb 81.8 g/L), $p < 0.05$). Our study confirms statistically higher morbidity in pts on hemodialysis with inadequate dialysis or lower values of Kt/V.

Atypical mycobacterial lymphadenitis in a hemodialysis patient

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PP

A case of atypical mycobacterial lymphadenitis in a 74-year old woman, hemodialysis depedent-secondary to cis-platinum chemotherapy for ovarian cancer-is described here. The patient presented with a swollen, firm, non-tender posterior cervical lymph node, fever, malaise, anemia and leukokytosis. ENT examination was otherwise unremarkable. Her chest X-ray and abdomen CT-scan were normal. A Mantoux test was moderately positive. A fine needle aspitate (FNA) was taken of the neck node. The cytological smear contained occasional Langerhans type multinucleate giant cells, necrotic debris and epithelioid cells. A diagnosis of non-tuberculous mycobacterial infection was confirmed by polymerase chain reaction detection of Mycobacterium avium-Mycobacterium intracellulare after biopsy of the node. The following antimycobacterial regimen was given: rifampicin 600mg orally once daily, ciprofloxacin 250mg orally twice daily, clarithromycin 250mg orally twice daily and ethambutol 400mg (800mg after hemodialysis) orally once daily. After six months the patient was commenced on a further course of clarithromycin 250mg orally twice daily and rifampicin 600mg orally once daily for six months and made a full recovery. At the time being, two years after the diagnosis was made, the patient is still in good condition. We consider this case interesting because atypical mycobacterial infection ia a very rare but serious condition in patients undergoing maintance hemodialysis.

Evaluation of adequacy of hemodialysis in hemodialysis patients

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PP

The adequacy of hemodialysis in patients on a chronic dialysis program is an important criteria as for the quality of life and the duration of survival. From a point of view of adequacy of HD KT/V is a significant parameter for moni-

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toring technical efficency on hemodialysis in individual patient. 60 pts on HD were examined in a period of six months. The evaluation was made in relation to sex, age, period on HD, duration of HD treatment, regime on HD, type of dialysis, type of dialyser and KT/V. The performed study is prospective. A urea kinetic method was used in predialysed and post-dialysed BUN of the second HD during a week with a regime of 3 times weekly. This study demonstrates that from total of 60 pts 26 or 39% had inadequate KT/V < 1,2. Patients which had longer HD performance had better KT/V. Patients with BMI above 25 had worse KT/V which has also been confirmed in other studies. In these pts the duration of HD should be continued (from 4 to 5 hours) or membranes with higher surface should be used.

Doppler sonography in the detection of significant renal artery stenosis

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PP

The aim of the study was to determine the usefulness of duplex ultrasound scanning (DUS) of the renal arteries in identifying patients with renal artery stenosis >50% (RAS). Subjects and methods. 41 patients, 18 women and 23 men, mean age 39.9+/-13.1 years were exemined prospectively. All studied patients had difficult to control hypertension, making them highly suspicious for renovascular desease. 13/41 patients (32%) had sCr>120 µmol/l, including one patient on dyalisis. DUS was performed by ESAOTE Au4 Idea in all patients. Diagnostic criteria of stenosis of 50% or more were: peak systolic velocity in the main renal artery above 180 cm/sec, renal/aortic ratios above 3.5 and side to side differences of the resistive index (RI) of the intrarenal vessels more than 0.05. Angiography was used as a "gold standart" in the diagnosis of RAS in 40 patients and MRI – in 1. Results. In 19 patients (46%) angiography demonstrated RAS>50% in 20 arteries, including 3 arteries with total occlusion. DUS identified RAS in 20 arteries (3 false positive) and 58 arteries without stenosis (1 false negative). The sensitivity of DUS was 95%, the specificity was 95%, the positive predictive value was 87% and the negative predictive value was 98%. Conclusion. Duplex Doppler sonography, evaluating both main renal and intrarenal arteries, is an ideal screening test because it is noninvasive, cost effective, and can predict the presence or absence of RAS with a high degree of accuracy, irrespective of renal function.

Factors affecting long-time survival on dialysis treatment: experience of one dialysis center

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OP

40 stable patients (12 female and 28 male) on hemodialysis treatment for more than 24 months (from 24 to 161 months) are followed for 17 years. After 17 years 8 patients in this group are still alive - 5 male and 3 female. Mean duration of the dialysis treatment for the survivors at the end of the period is 275,4 months (from 233 to 336 months). There is no significant difference between survivors and dead in relation to such indices as: hemoglobin, albumin, urea, creatinine, calcium, phosphate, potassium, sodium and dose of dialysis (URR). A note should be made, that among the patients followed, there are no cases of severe anaemia and malnutrition, and the dialysis dose is adequate in all patients. The survivors are younger ($p<0,01$) and have significantly lower pulse pressure before dialysis ($p<0,01$). In this group there is not a single patient with a predialysis arterial blood pressure higher than 145/90, while 35% of deceased had hypertension. The survivors had a significantly lower number of abnormalities in ECG readings ($p<0,01$). Not a single patient in this group has indices of autonomic system dysfunction compared to 55,6% in deceased ($p<0,01$). Contrary to the established attitude, that the abnormally high weight in dialyzed patients positively affects survival, all 8 patients alive for the 17-year period of observation have a normal BMI.

Dialysis treatment in Bulgaria 1993-2001

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OP

The information for the previous 9 years is shown on a table.

Year	1993	1994	1995	1996	1997	1998	1999	2000	2001
Dialysis Treatment (DT)	1878	1955	2023	2076	2130	2091	2168	2273	2309
DT p.m.p	226,2	237,0	246,7	254,7	263,1	259,8	271,0	285,9	292
Hemodialysis (HD)	1866	1935	1989	2035	2078	2004	2074	2159	2188
HD p.m.p.	224,8	234,6	242,6	249,7	256,5	249,0	259,2	271,6	277,0
Peritoneal Dialysis (PD)	12	20	34	41	52	87	94	114	121
PD p.m.p.	1,4	2,4	4,1	5,0	6,4	10,8	11,8	14,3	15,3

Till 1999 usually 55-60 patients/p.m.p. start dialysis treatment annually, but in the recent 3 years this figure radically grows to 85-90 patients/p.m.p. For the discussed period the dialysis population in Bulgaria increases with 23% (a mean

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annual increase of 2,9%), the number of patients on hemodialysis treatment grows with 17,3% (a mean annual increase of 2,2%), while in CAPD patients a boom of 908% is noted (a mean annual increase of 113,5%). First calculations of hemodialysis annual price date back from 1992-93, when it was 9944 Euro, while at the same time the costs only for the imported CAPD solutions per patient/year were 10931 Euro. In 2001, the costs for HD are 11059 Euro and for CAPD therapy - 9826 Euro - peritoneal dialysis treatment is 11% cheaper compared to hemodialysis.

Assessment of serum osteoprotegerin and SRANKL in predialysis patients with chronic renal failure

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OP

An important discovered complex involved in osteoclastogenesis is osteoprotegerin/ osteoprotegerin-ligand (OPG/OPGL) cytokine complex produced by osteoblasts. Osteoclast activation is a critical step in the development of high-turnover bone disease. OPG is a decoy receptor that blocks the interaction of nuclear factor-kB (RANK) with its ligand (RANKL), thus inhibiting osteoclast differentiation and activity. Many calciotropic hormones and cytokines including 1,25/OH/2D3, PTH, appear to act through a dual mode to inhibit OPG production and stimulate RANKL. There is some data about OPG in dialysis patients, but in this moment there isn't publication that evaluate the serum level of OPG, RANKL in predialysis patients with CRF. The aim of this study is to determine the level of OPG and RANKL in predialysis patients and their role in the start of renal osteodystrophy /RO/. Patients and methods. Fifty one patients - 28 men and 23 women /mean age 48,7±9,3/ were examined. The results were compared with 32 healthy controls. The serum OPG and sRANKL were measured via immuno-enzyme methods /Biomedica-Austria/ and detected with ELISA-reader λ 450 nm (SEAC-Italy). Serum creatinine, serum Ca, P , intact PTH, bone alkaline phosphatase were measured and correlated with OPG and sRANKL too. Results. The serum OPG in predialysis patients was significantly increased - 5,735±0,35 pmol/l as compared to that of the controls - 3,772±0,33 pmol/l (P< 0,001) The OPG was highest in patients with II st. CRF (Ccr 20 - 10 ml/min) - 6,746±0,51 pmol/l versus 4,504±0,32 pmol/l (P<0,002) in I st. CRF (Ccr 20 - 40 ml/min). Serum OPG was increased in 21 /41,18%/ of predialysis patients more than 1SD, compared to controls. The sRANKL was significantly increased in predialysis patients - 0,545±0,042 pmol/l versus 0,203±0,031 pmol/l (P<0,0001) in the controls /0,574 ? 0,072 in I st. and 0,521±0,049 in II st. CRF/ The OPG/sRANKL ratio in predialysis patients with CRF - 14,89±2,19 was significance decreased as compared to that of the healthy controls - 23,03±2,81 (P< 0,001). Conclusion. OPG and sRANKL are significantly increased in predialysis patients and can be used as a markers for noninvasive diagnosis of RO.

Do vitamin D receptor gene polymorphism Fok I affects secondary hyperparathyroidism in predialysis patients with chronic renal failure?

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PP

The best candidate gene could influence the secretion of PTH and correlate with bone density is the VDR gene. It consists of 11 known exons, some of which demonstrate regions of polymorphism. This restriction fragment length polymorphism may assessed by PCR amplification and digestion with restriction enzymes Fok I, Bsm I, Apa I and Taq I recognizing polymorphic sites in the VDR locus. The Fok I site at the 5' end containing the start codon in exon II. There are some investigations about the effect of VDR polymorphism (Bsm I, Apa I) on parathyroid response in haemodialysis and predialysis patients with CRF. Up to now, there isn't any publication about influence of Fok I VDR polymorphism on secondary hyperparathyroidism in predialysis patients. The aim of this study was to analyze the role of Fok I VDR polymorphism in predialysis stage of CRF. Patients and methods. Thirty-one patients -17 men and 14 women /mean age 49,6±8,7 age/ were examined. Sixteen of patients were at I st. CRF and 15 at II st. Leucocyte DNA was isolated from peripheral venous blood. The Fok I polymorphic region of exon II was amplified by oligonucleotide primers. PCR amplification was carried out with Taq DNA polymerase (Abgene) and digestion with Fok I restrictase. The presence of the Fok I restiction site on both alleles defined as ff, whereas the absence as FF and the heterozygous Ff. The serum creatinine, calcium /Ca/, P, AP, intact PTH and bone alkaline phosphatase /BAP/ were measured too. Results. The distribution of allelic variation in predialysis patients was: 7 /22,6%/ with FF, 22 /71,0%/ with Ff and 2 /6,5%/ with ff. The glomerular filtration rate and serum creatinine was similar in the different groups. No significant difference in serum calcium, phosphorus, alkaline phosphatase existed among groups. The level of intact PTH and the incidence of low and high PTH in the groups were analyzed. BAP of FF patients was significantly increased than BAP at Ff patients.

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Pseudoxanthoma elasticum as a cause of hypertension in a child

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PP

Hypertension caused by pseudoxanthoma elasticum (PXE) is described rarely in childhood. We report a 12-year-old girl who presented an episode of acute upper gastrointestinal hemorrhage, anemia and severe renin-dependent hypertension. She had characteristic cutaneous and ocular signs of psuedoxanthoma elasticum, and the diagnosis was confirmed histologically. Renal ultrasound showed characteristic pattern of dotted increased echogenicity at the corticomedullary junction. However renal arteriography finding was normal. Since the patient's father and taunt have cutaneous manifestation of PXE, autosomal dominant inheritance is the most likely inheritance pattern in this family.

Evaluation of individual renal function using tc 99m DMSA scyntigraphy in children with urinary tract infection

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PP

This study has been designed to evaluate clinical applicability and significance of the functional study with DMSA scan in management of children with urinary tract infection (UTI) and sustained renal parenchymal damage. The aims were 1) to determine values for absolute uptake of DMSA in normal kidneys in children and 2) to assess whether significant differences in absolute uptake are present in kidneys which on DMSA are presented as "morphologically abnormal" and those, which are declared as "normal". Inclusion criteria were at least one episode of UTI and no obstructive uropathy on ultrasonography. Renal parenchymal damage was evaluated by DMSA scan and detection of vesicoureteric reflux by direct cystographic study (radionuclide or radiological). Individual renal function was assessed by quantitation of absolute uptake of DMSA on delayed images 24 hours after injection. Differential functional index was calculated in 124 children with urinary tract infection. The values obtained in a control group (41 children without any urinary tract abnormalities) were: left 21.1±6.48%, right=21.1±5.95% and were comparable with those published in the literature. The significant association between the values of means individual renal indices and the presence of morphologic abnormalities on DMSA scan (as indicator of renal parenchymal damage) was observed. The absolute percent of DMSA could be used as valuable indicator of individual renal function in diagnosis and follow-up of children with urinary tract infection and renal parenchymal damage. Index terms: Tc99m DMSA cortical scyntigraphy, differential renal function, urinary tract infection, renal parenchymal damage

Hemorrhagic fever with renal syndrome: clinical manifestations and course of disease

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PP

During the last three years we treated 21 patients with acute renal failure who had clinical signs of hemorrhagic fever. There were 20 males and 1 female aged from 22 to 64.Initial symptoms were high temperature, muscle pains, abdominal symptomatology, hemorrhagic manifestations as petechial rash, hematoma, conjuctival injection, hematemesis and melena. In six cases respiratory symptoms and signs such as cough, pneumonic infiltrations and pleural exudation were present The oliguric phase usually appeared on the third or fourth day. Values of urea in blood were of 20,9-69,9 mmol/l (`x=45,3 mmol/l) and creatinine were of o,413-1,465 mmol/l(`x=o,967 mmol/l). Considerable thrombocytopenia was seen at 14 patients (66,6%) with the lowest value of 22x109/l (`x=56,7x109/l) In 13 cases (61%) leukocytosis was evident. The growing of transaminases existed at 13 patients (61%). We treated 15 patients (71,4%) by haemodialyses, 6 (28,5%) patients were not treated bacause they started urinating and kidney function improved. After polyuric phase of different duration completely normalisation of kidney function was seen at 16 patients (76,1%) and other 5 (23,8%) patients died. Rapid diagnosis and hospitalization are of great importance since it enhances patient management and allows early treatment of hantaviral disease.

Experience with a high-dose oral iron sulphate and gluconate in peritoneal dialysis patients

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OP

Iron supplementation plays a major role for peritoneal dialysis patients (PD). Oral iron substitution is more convenient than intravenous therapy in PD patients, but imparied absorption and adverse effects may be limiting factors for oral treatment. The purpose of the present study was to compare absorption and side effects of large doses iron sul-

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phate and iron gluconate in PD patients. In 19 PD patients with different grade of iron deficiency blood samples were taken at baseline as well as 2, 4 and 8 hours after oral intake of 4 tablets iron sulphate /105 mg elemental iron per tablet/. Test was repeated using VIII drinkable ampoule of iron gluconate /50 mg elemental iron per ampoule/. The maximal increase in serum iron during the test with iron sulphate was 170,5%±83,9% versus 190,28%±130,18% with iron gluconate Six patients showed an increase in serum iron of more than 300%, in 8 patients serum iron increased between 100% and 300% and only in 5 patients was an increase of less than 100% noted if iron gluconate is used. Side effects occurred more freqently after intake of iron sulphate than iron gluconate. We can conclude that high dose oral iron is well absorbed and tolerated in PD patients. Iron gluconate is better absorbed and tolerated than iron sulphate and we recommend it for oral iron supplementation in PD patients.

Premedication with vivatonin in patients before renal biopsy

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PP

The main part of the Vivatonin /Borola/ is the substance melatonin, which is secreted by the pineal gland. His quantity is different during the day and the night. It regulates the sleep-wake cycles. In adults its secretion decreases. The aim of the study was to investigate the effect of the Vivatonin as premedication in patients before renal biopsy. In the study were included 31 patients (23 males and 8 females). Each of them received 5 mg (5 tablets) Vivatonin at the evening before kidney biopsy. The status of sleep and anxiety were evaluated before and after the drug administration. A questionnaire for quality of sleeping and anxiety was filled in . The evaluation was made using 4 degrees- no effect, mild, moderate and strong effect. We observed that the sleep was affected moderately in 31% and strongly affected in 69%. The anxiety was mild affected in 8%, moderate in 40% and strongly in 52% of the patients. No adverse effects from the drug application were established in all patients. We conclude that "Vivatonin" decreases the feeling of anxiety and improves sleeping in patients. They were with psychological stability before kidney biopsy that provides a calm work of the operator and guarantees the success of the manipulation.

Influence of single kidney GFR of donors' kidney on posttransplant graft function

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OP

Recipient (R) of a living donor graft is more likely to receive a kidney with good functional reserve. This study was conducted with the aim to evaluate the influence of the quality of the kidney graft on early and late graft function and outcome. A lack of cadaveric kidneys has resulted in an increase in living related kidney transplantations (Tx) at the Institute for Nephrology in Beograd, presented 70% of all kidney Tx. In order to exclude posttransplant events in the early period (already proved to be of impact on early and late graft outcome), 47 living related kidney graft R with no acute rejection and no delayed graft function were selected for detailed analysis. Triple drug immunosuppressive regimen based on cyclosporine A was given in standard doses. The R were followed from 2 to 5 years. Relative contribution of the transplanted kidney to overall GFR, assessed by 99mTcDTPA in living donors was used as the baseline function of the renal graft (SKGFR). Results: 18 D were older than 60 yr. The average SKGFR was 53±12 ml/min. No correlation between GFR and D age was found, and the D older than 60 revealed the similar SKGFR as younger one (51 vs 54 ml/min). Cold ischemia time never exceeded 60 min. No surgical complications during the donor nephrectomy and kidney transplantation and no severe anatomic abnormality in the grafts were found. None of the evaluated immunological (HLA mismatches, PRA) and non immunological (D and R related, cyclosporine doses) data were found to have an impact on the early and late graft outcome, but SKGFR independently influenced on graft's CCr during the first year after Tx. During the follow-up period approximately 10 ml/min increase of R creatinine clearance (CCr) was noted at the end of the second posttransplant year in comparison to the baseline SKGFR. Additionally, CCr of the kidney from the younger D increases steadily with time i.e. SKGFR= 53.9±10.5 vs. CCr =72.5±29 ml/min at the end of the second year (p= 0.003), while it is almost stable for kidneys from older D i.e. SKGFR= 51 vs 59 ml/min at the end of the second year (NS). Chronic graft failure was noted in 12 R due to chronic graft nephropathy (7 R), noncompliance (one R) and heart related circulatory impairment (2 R). It could be concluded that donors GFR significantly influenced late graft function. The obtained results confirmed limited capacity for compensatory hypertrophy for grafts obtained from older donors.

Cardiovascular risk factors in patients with chronic renal failure

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PP

Cardiovascular morbidity and mortality in patients with chronic renal failure (CRF) is higher than in general population. The consideration that this pts. are in " higher risk" group for subsequent (CVD) events is based on detection of

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multiple cardiovascular risk factors (CVF)- " traditional " and unique for CRF. We evaluate CVF in pts. with CRF with regard to clinical presentation of CVD during 6 months. 17 pts were examined – 10 F and 7 M, average age 49 years with glomerular filtration rate from 10 to 58 ml/min. 4 pts were with primary glomerulonephritis (GN), 4- nephropathies due to systemic diseases, 2- I type diabetes, 1 –II type diabetes, 2 -chronic pyelonephritis, 2 with hypertensive nephropathy and 3 others - with interstitial nephritis, amyloidosis and Balkan endemic nephropathy each. Elevated blood pressure was detected in all pts. Immunosuppressive therapy was needed in 2 pts with GN. We examined "traditional" CVF- age, gender, body mass index (BMI), smoke, blood pressure, hyperlipidemia, carbohydrate metabolism- diabetes or glucose intolerance (GIT) as well as related to CRF CVF- anemia, hyperphosphatemia, left ventricular hypertrophy, hyperhomocysteinemia, hyperinsulinemia, based on the values of IRI, proteinuria and need for pathogenic treatment with steroids. Using Framingham point score that is based on " traditional" risk factors we assess 10 year cardiovascular risk in all pts. 10-year cardiovascular risk is above 30% (≥30 points on the score) in 10 pts. in the other 7 - was between 20 and 30% (20-30 points on the score). After 6 month period 7 pts (35%) had coronary incident: 1 died from myocardial infarction; in 2 ischemic heart disease is manifested by arrhythmia; in other 3 ECG criteria for heart ischemia was detected. All of them had advanced renal failure, diabetes or hyperinsulinemia, Framingham Point score >30 and were positive for all related to CFR CVF. Strategies for CVF identification and reduction in pts with CRF should target not only traditional ones but also those related to the renal failure. Identify pts. with CRF especially those with diabetes at an earlier stage, performed primary and secondary prevention using earlier risk factor reduction proves better pts outcome and quality of life.

A long-term study of diabetic nephropathy in adolescent patients in north-easthern Bulgaria

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PP

A clinical prospective 10-years longitudinal study was hold among 208 adolescent individuals. They were 85 diabetic boys and 64 girls, mean age 14.1± 3.8 years, mean duration of diabetes 8.45± 3.7 years and 59 healthy controls. We established the frequency of microalbuminuria and assessed the evolution of renal involvement by using clinical, instrumental and laboratory methods. Three groups of patients were discussed: pts without microalbuminuria, pts with microalbuminuria and pts with clinical (overt) nephropathy. The diabetics with macroalbuminuria were excluded from the study. We followed up some indexes of renal progression: rate of reduction of GFR (ml/min/month) and % of its reduction per year; elevation of albumin excretion (μg/min/year) and % of its elevation per year; elevation of blood pressure (mm Hg/year) and % of its elevation per year. The effect of angiotensin-converting enzyme inhibitors depended on the level of the initial albumin excretion. In patients with microalbuminuria the treatment led to holding up the progression for 10 years in 86.48%, progression in 8.1% and regression to normal albuminuria in 5.4%. In 21.73% of patients with borderline albumin excretion there was a progression after the 5-th year with cumulative index 4.5% or 0.91% per year.

Uroinfection in diabetic patients. Is it a problem in general practice?

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PP

Infection of the urinary system in diabetic patients is not rare and asymptomatic bacteriuria is detected very often among this population. We tested 356 patients with type 2 DM from 9 general practices of Varna region, Bulgaria in a prospective 2-years study. The aim of the study was to estimate the clinical significance of uroinfection and asymptomatic bacteriuria (ABU) in ambulatory treated diabetics their frequency, clinical characteristics, course and evolution. The patients were 189 female and 167 male; mean age – 56,2 ± 2,8 years and duration of DM was - 9,45 ± 3,2 years. The results showed ABU in 14,04% of the tested diabetics. Upper urinary tract infection developed in 4,77% of diabetics and the complications were even rare: 0,84% pyonephrosis and 1,12% urosepsis. In our tested diabetics the uroinfection wasn't so severe as it was postulated in the past. The pyelonephritis had a benign course and only 15,17% of our patients developed CRF, few years later. All these facts show that ABU in most of diabetics disappears spontaneously. We consider that uroinfection in diabetic patients is not so serious problem in general practice. We recommend a precise estimation of antibiotic treatment in diabetic patients with asymptomatic bacteriuria.

Early complications of chronic peritoneal dialysis in our center

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PP

Early complications (peritonitis, bleeding, outflow obstruction, dialysate leak) are not rare in patients on chronic peritoneal dialysis (CPD) and may influence the patient's and technique outcome. This study reports the results of a retro-

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spective analysis of perioperative complications of peritoneal dialysis at the Center for Kidney Diseases, Zvezdara University Hospital in Belgrade. 228 patients (106 males and 122 females) with a mean age of 61,4 § 13,8 years were started on PD between January 2000 and December 2002. Double-cuff straight Tenckhoff catheters and single-cuff Brown catheters were surgically placed under local anesthesia. Bleeding following catheter insertion was observed in 34,6 % of patients, but stopped after the first dialysate exchanges and in no case required additional treatment. One-way (outflow) obstruction was the most common cause of early catheter failure (6,l %). Dialysate leaks (4,4 %) occurred more frequently in women, those older than 65 and with the single-cuff catheters. High incidence of early peritonitis (17,1 %) can be partly explained by the perioperative use of glass bottles containing the dialysis solution, which are connected to the catheter by an infusion set. Peritonitis occurred more frequently (27,6 % vs. 15,8 %) if the dialysis was started urgently during the night and in patients with the pericatheter leakage. There was no connection between causes of chronic renal failure and frequency of peritonitis. Early complications of CPD are not rare and special attention has to be paid on it's prevention.

The correlation of beta-2 microglobulin to inflammatory indices in hemodialysis patients

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PP

Background. β2 microglobulin is accumulated in Hemodialysis (HD) patients and produced by activated polymorphonuclear cells and macrophages under cytokines stimulation. Aim. The aim our study was to investigate any influence of inflammatory conditions to β2 microglobulin serum levels. Materials and methods. We studied 81 anuric HD patients (33F – 46M), 62,9±15,7 years (range 22-87), and on HD for 46,4±51,5, months (range 2-238). All patients were hemodialyzed thrice weekly (4hours sessions) with low flux membranes. No patient received anti-inflammatory treatment (NSAID, ASA, Corticosteroids) or suffered from malignancy or chronic inflammatory disease (e.g. vasculitis, TBC). Blood was drawn at the beginning of the first dialysis session of the week and β2 microglobulin levels as well as CRP, ESR, procalcitonin, as inflammatory indices, were measured. Results. Our results were the following: β2 microglobulin 30,1±13,9mg/lt (range 14,2-79,1), ESR:55,2±31,6 mm/h (range 4-138), CRP 14±28,5mg/L (range 0,16-214), procalcitonin 1,11±0,89ng/ml (range 0,3-5,2). Statistically significant was the correlation of β2 microglobulin to procalcitonin levels ($r=0,552$ $p<0,001$), while the correlation of β2 microglobulin to ESR and CRP had no statistical significance. Conclusions. According to the results of our study β2 microglobulin production and serum levels could be influenced by clinical or subclinical infections as evidenced by procalcitonin levels.

Peritoneal dialysis-related peritonitis. Analysis of the local microbiology and sensitivity pattern of causative organisms

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OP

Aim of the study was to assess the rate of peritonitis, causative organisms and antibiotic susceptibility in our CAPD patients. In 98 CAPD patients aged 50.46±18.18 in average, 201 episodes of peritonitis were diagnosed within period 1998-2002, that is, one episode per 23.9 months of treatment. Bact/Alert Organon technique was used for automatic continuous monitoring of bacterial and fungal growth. Increased growth of the Gram- positive bacteria was detected in 149 (74.12%), Gram-negative in 24 (11.94%) and fungi in 8 (3.79%) of dialysis effluent cultures. Culture was sterile in 18 (8.95%) patients and TBC peritonitis was histologically confirmed in two patients. Isolated strains of CNS, Staphyloccocus aureus and Enteroccocus showed 100% sensitivity to Vancomycin and Enterobacteriacae to Imipenem. Methicillin-resistent CNS strains were found in 65.20% and S. Aureus in 46.20% of samples. In 88.1% of all episodes the peritonitis was cured with antibiotics treatment and in 10,9% the catheter had to be removed. In 0.99% of the cases the patients died during the peritonitis episode, mostly for reasons not related to the infection.

Importance of the serum i-PTH levels in evaluation of the form of renal osteodistrophy in our CAPD patients

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PP

Within 2002. the serum i-PTH leveles (ELISA-PTH) were determined in 50 patients on CAPD (26 males and 24 females, aged 50.96±18.18 in average). Average duration of dialysis was 32.58±22.18 months. Average range of i-PTH levels in our patients were 315.02±244.71pg/ml, ALP 188.19±444.94 U/l, total serum calcium 2.32±0.20 and phosphorus 1.73±0,43 mmol/l. According to i-PTH levels patients were divided into three groups: I with i-PTH 0-100 (10 patients), II with i-PTH 100-300 (20 patients) and III

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group with i-PTH over 3000 pg/ml (20 patients). Statistically significant positive correlation was found between the serum calcium and i-PTH levels and negative between the phosphorus and i-PTH leveles (p< 0,01). Obtained levels of the serum i-PTH, without bone biopsy finding, could help in the assessment of the bone turnover type and facilitate the renal osteodistrophy management in patients on CAPD.

Serum osteocalcin as marker of the renal osteodystrophy response to vitamin D therapy

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The value of Serum osteocalcin (BGP) as marker of renal osteodystrophy is disputable. We examined whether BGP can be used in the evaluation of renal osteodystrophy therapy with vitamin D, in early phases of chronic renal failure (CRF). Fourteen patients with CRF (creatinine clearance 45 to 18 ml/min) and biopsy proven high turnover bone disease (10 patients) or mixed lesions of high and low turnover bone disease (4 patients), were treated for 12 to 15 months with 1aOH D3 in a dose of 0,25 to 0,5 μg/day peros. The dosage of vitamin D was adjusted to keep serum calcium within normal limits. Calcium carbonate was also administered intermittently, in order to keep serum phosphate < 5,5 mg/dl. At the beginning as well as at the end of the study, BGP, intact PTH, alkaline phosphatase and bone histomorphometric parameters, that included Osteoid surface area (OSA,%), Osteoid volume (OV,%), Total eroded surface area (TESA,%), Osteoclasts count (OC,10°-2°/mm), Trabecular wall thickness (ν), Mineralizing front (%), Mineralization rate of trabecular bone (%ν/day) and Bone formation rate (%/time), were estimated. Before the administration of 1aOH D3, BGP had highly significant correlation with intact PTH (r=0,92, p=0,000) as well as with the histomorphometric indices OSA (r=0,695, p<0,05), TESA (r=0,869, p<0,001) and OC (r=0,848, p<0,001). At the end of the study BGP, although decreased from initial values 30,28±6,94 to 20±5,14 ng/ml (p<0,001), remained still high (normal values measured by radioimmunoassay, CIS Bio-international France, 6,7±2,6 ng/ml). In contrast intact PTH and alkaline phosphatase did not change significantly (intact PTH from 166,9±26,6 to 152,3±20,8 pg/ml and alkaline phosphatase from 90±12 to 82±14 IU). Regarding the histomorphometric parameters, all improved, either significantly (p<0,05) (OSA, TESA, OC) or not (all the rest). In this face of the study, no significant correlation was found between BGP and biochemical, hormonal or histomorphometric parameter. Our study indicates that BGP may probably contribute to the evaluation of bone metabolism in patients with CRF. However it does not seem to be sensitive marker of the vitamin D effect on renal osteodystrophy.

Ultrasound findings in hemodialysis patients

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PP

A useful way of examining internal organ, including the liver, gallbladder, spleen, pankreas, kidneys,and bladder is the ultrasound scanning. This examination can help to diagnose a variety of conditions and to assess damage caused by illness. Aim: the purpose of our study was to examine the ultrasound findings in chronic dialysed patients. Patients-methods:we performed ultrasound in 43 stable chronic dialysed patients. The reason of asking ultrasound was the preparation for renal transplantation. Males were: 65%, mean age:61 years and mean duration in dialysis 54 months. Results:we found small kidneys in: 86%, polysystic kidneys in: 14%, degenerative cysts in: 14%, kidneys stones in: 5%. Expansion of spleen in: 5%, calcinosis of spleen in: 2%. Non visible pankreas in: 9%, cyst of pankreas in: 2%. Normal findings from liver in: 49%, fatty liver in: 37%,liver cysts in: 7%,hemagioma in: 5% and hepatoma in: 2%. Chololithiasis in: 33% and cholocystectomy had been performed in: 12%. Conclusios: ultrasound scanning is a non invasive and usually painless method and is the preffered image modality for diagnosis. Ultrasound is widely available and easy to use in our patients without harmfull effects since now. Small kidneys with degenerativvve cysts and chololithiasis seems to be common finding in our patients population.

Acid-base balance in dialysis patients

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PP

The purpose of our study was to examine whether even a mild degree of acidosis increases morbidity and mortality in patients with end stage renal disease. Patients-methods:In 47 stable chronic dialysed patients we examined acid-base balance before and in the end of dialysis. Males were:64% with mean age: 64 (SD:11,5) years and mean duration in dialysis: 53,5 (SD:43,5) months. Anuric were: 80%. Results: The mean pre-dialysis pH was: 7,40 (SD:0,034) and mean pre-dialysis HCO3-were: 21,4 (SD:2,97) mEq/l. In the end of dialysis the mean pH was: 7,47 (SD:0,042) and the mean HCO3-were: 26,75 (SD:3,21) mEq/l. We found no statistical differences in K+, Na+, Ca+b but we found for Ht (pre:36%,after:41%,p<0.05) and for Hb (pre:11g%,after:14g%,p<0,05). Diastolic dysfunction had:42% of these patients, myocardial infraction:11%, cardiac failure(EF<40%): 23%. 11% died after a mean period

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of 40 months in hemodialysid and all of them were coming with mild acidosis before dialysis. Conclusions:the majority of hemodialysis patients havvve mild metabolic acidosis before the dialysis session and they are alcalotic in the end. This acidosis should play a role in their morbidity. Probably, more attention needs to be paid to the possible effect of over-correction of acidosis.Whether patients with steady-state values between 19-24 mEq/l require specific attention remains an issue for further investigation.

The management of hypotension in hemodialysis patients

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PP

Background: Dialysis induced hypotension (DIH), the most frequent complication of dialysis occurs in 25-50% of dialysis treatments. The pathogenesis and causes are complex. The critical factor is the decrease in blood volume induced by ultrafiltration but we occasionally observe patients who show DIH during relatively low ultrafiltration volumes. Aim: the purpose of our study was to examine the patients with DIH , the management to decrease the risk and to control the poor outcome in those with recurrent hypotensive episodes. Patients-methods: the period 2002 22/55 (40%) patients had hypotensive episodes(BP<100mmHg) during their hemodialysis session. Males were:11/22 (50%), mean age:67,13 (SD:8,36) and mean duration in HD: 41,78 (SD:49,75) months. Mean hypotensive episodes :2/month (1-4). Diabetics were: 5/22 23%),ischemic cardiac disease:16/22 (73%),myocardial infraction:3/22 (14%) cardiac failure (EF<40%): 10/22: (45%) and on antihypertensive treatment:8/22 (36%). High flux membranes we used in 20%. The mean weight gain was 4 Kgr in the interdialytic period. Interventions:the first priority for patients developing IDH was the stabilization of the blood pressure and improvement their symptomatology.We used fludrocortisone, in compination with prescription modification in :2/22 (9%). We withhold the antihypertensive medications before dialysis, we increased the dialysate calcium concentration, we used cool dialysate in patients with low body temperature, we used higher dialysate sodium and we stopped feeding them during dialysis.Outcome:1/22 (5%)transmitted to CAPD after 2 monts in HD, 1/22 (5%) transplanted from a living donor after 9 months in HD and 8/22 (36%)died after a mean period of 57 months (12-240) in dialysis. Conclusions:Intradialytic hypotension is a serious complication of hemodialysis. Despite numerous advances in dialysis technology the occurence of hypotension during dialysis remains a common problem with conciderable morbidity. Non compliance and high iterdialytic weight gain in the setting of LVH and diastolic dysfunction can increase the risk of IDH. Pharmacologic interventions should be considered for patients who require repeat interventions for DIH in combination with dialysis modification.

Efficacy and safety of uro-vaxom on prevention of urinary tract infection

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PP

Background: Lower urinary tract infections are the most common infections for the nephrologists and urologists. Women represent 80-90% of these patients. 10-20% of the women have at least one episode during their adult life. After an initial episode 30% of this population will have at least one recurrence the next 6-12 months.Aim:this study has made to demonstrate efficacy and safety of uro-vaxom in reducing the number of urinary tract infections episodes. Patients and methods: in 20 patients (group A), we gave 1 capsule per day uro-vaxom during 3 months with conventional antibiotics. All the patients had more than 2 urinary tract infections during the last 6 months and had actually an acute infection with dysuria, fever and bacteruria. In 10 patients (group B) with the same criteria we did not give uro-vaxom. The duration of the study was 9 months. Women were 60%,chronic renal failure and nephrolithiasis persisted in 20%. Gram(-) bacteria revealad in 80% (e.coli,proteus,klebsiella). Gram(+) in 20% (enterococcus,staphylococcus). Results:The first 3 months 55% of the patients from group A had no recurrence. After 5 months from the end of receiving uro-vaxom, 37% had one episode in group A and 67% in group B($p<0,05$). The intensity and duration of symptoms were diminished in A group in comparison with the symptoms in the control group. Adverse reactions like rush, diarhia, headache revevaled in 4%. All patients finished this protocol. Conclusions: uro-vaxom seems to be safe and effective when we use it in a combination with antibiotics in the lower urinary tract infections without serious adverse effects.

Renal function and early arterio-venous fistula cvonstruction

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PP

Introduction. Placement and adequate maturation of an arteriovenous fistula (AVF) for hemodialysis means adequate blood flow for chronic hemodialysis treatment when needed. It was noticed that deterioration of renal function was slower in chronic renal patients with AVF constructed at serum creatinine level between 450 and 500 μmol/l. Aim. Aim of this prospective study was to find out the influence of AVF on the renal function. Results. Patients (pts) were randomised in two groups. In group A of 10 chronic renal pts, 6 males and 4 females, mean age 62 ± 7.3 yrs (range

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from 56 to 79 yrs), primary cause of kidney failure was in 5 pts glomerulonephritis, in 2 APKD, in 2 hypertension and in 1 other, mean serum creatinine level 463 ± 34 ?mol/l (range from 430 to 498 μmol/l), mean creatinine clearance 26.7 ± 3.8 ml/min, daily dieresis mean 1680 ml (range from 1340 to 2120 ml) native forearm AVE was constructed. Group B of 10 pts, 5 males and 5 females, mean age 60.8 ± 6.2 yrs (range from 52 to 81 yrs), primary cause of kidney failure was in 4 glomerulonephritis, 1 APKD, 2 hypertension , and in 2 other, mean serum creatinine level 492.4±62.2 μmol/l (range from 463 to 512 μmol/l), mean creatinine clearance 25.1±6.2 mL/min, daily diuresis 1230 ml/min (range from 980 to 2110 ml) was followed without AVF construction. Patients in both groups were followed every two months. After 1 year in group A 1/10 pts (10%) started with hemodialysis (HD) (8 months after AVF construction). In 9 pts mean serum creatinine level was 560 ± 43 μmol/l (range from 490 to 593 μmol/l), creatinine clearance 19.3±4.2 ml/min, no difference in diuresis, mean arterial blood pressure (MAP) was 102 mmHg, mean AVF blood flow 879±123 ml/min, no signs of cardiac insufficiency was found. In group B 5/10 (50%) ($p<0.001$) started with HD (from 6 to 11 months), central vein catheter was used as a vascular access. In rest of 5 pts mean serum creatinine level was 794 ± 62 μmol/l ($p< 0.01$), creatinine clearance 11.2 ± 2.3 ml/min ($p< 0.001$), MAP was 112 mmHg (NS). Conclusions. Beside well maturated AVF, useful for adequate HD treatment when needed, results of this prospective study indicates benefit of early AVF construction on progression of renal insufficiency. One of the reasons could be increased cardiac output because of increased cardiac pre-load and the consequences could be increased perfusion of the kidneys, but further study of renal perfusion by duplex sonography are planed.

Aledronate treatment for osteoporosis of renal transplant recipients, late after transplantation

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PP

Long term steroid therapy is the main cause of osteoporosis in transplanted patients. Biphosphonates prevent osteoporosis in menopausal women. Recently they are used to prevent osteoporosis in renal transplant patients. After osteoporosis has been established in these patients, data about Biphosphonate effectiveness are conflicting. Four renal graft recipients, transplanted 102 months (24-120), under triple immunosupression, (prednison, cyclosporin, azathioprine), presenting clinical and laboratory findings of osteoporosis, were treated with aledronate, calcium and vitamin D (1,25OHD3) for 12 months. Lumbar spine bone mineral density (BMD) was measured by dual energy X-ray absorbsiometry (DEXA) at the beginning and the end of the treatment study. Other measured parameters evaluated changes in glomerular filtration rate (GFR), iPTH, alkaline phosphatase, serum and urinary calcium, creatinine and proteinuria. All four patients clinically improved under treatment. BMD increased slightly from 0,871(0,845-0,923) to 0,922(0,887-1,035) g/cm2, while T-score diminished from -2.9(-2,36 to -3,56) to -2.06(-0,39 to-2,98). The other biochemical parameters did not show any significant change. Treatment by aledronate, calcium and vitamin D, although administered late after transplantation, is effective improving steroid induced osteoporosis in kidney recipients.

Comparison of cyclosporine and low dose methylprednisolone combination with cyclophosphamide and methylprednisolone combination in patients with nephrotic syndrome due to idiopathic membranous nephropathy

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PP

Aim of the study: The comparison of cyclosporine and low dose methylprednisolone combination (CYAMP) with cyclophosphamide and methylprednisolone combination (CPSMP) in pts with idiopathic membranous nephropathy (IMN) and nephrotic sybdrome (NS). Material-Methods: 16 pts classified in CYAMP group (male 6, female 2, mean age 49.12 ±16.55 years) were treated with 3-3.5 mg/kgBW/24hour of oral cyclosporine and 12.5 mg/24hour oral metylprednisolone and CPSMP group (male 4, female 4, mean age 55.37±12.74 years) were treated with 2 mg/kgBW/24hour of oral cyclophosphamide and 1.5 mg/kgBW/48hour of oral methylprednisolone for 9 months. Serum creatinine, albumin, cholesterol and 24-hour proteinuria were considered at baseline and during the medication period. No differences were observed between groups in baseline mean creatinine (1.09±0.20 vs 1.50±0.55 mg/dL), albumin (2.65±0.80 vs 2.77±0.64 g/dL), cholesterol (445.62±98.00 vs 377.12±58.74 mg/dL) and proteinuria (11.45±4.80 vs 7.04±1.88 g/24hours). Statistical analysis was performed by ANOVA. Results: Serum creatinine was not changed in both groups. In CYAMP group albumin was increased significantly from the first month while cholesterol and proteinuria were decreased from the second and third month correspondingly. In CPSMP group albumin was increased significantly from the third month while cholesterol and proteinuria were decreased from the fifth and first month correspondingly. No differences in parameters stud-

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ied were noted between groups during the study period. Conclusion: CYAMP and CPSMP therapy in pts with IMN and NS improves similarly hypoalbuminaemia, hypercholesterolaemia and proteinuria without changing renal function. Differences observed were the earlier response of CYAMP group pts and the greater number of CYAMP group pts presented with NS (4 vs 1) at the end of the study.

Long term effects of corticosteroids on renal function and proteinuria in patients with IgA nephropathy

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PP

The aim of the study was to evaluate the long term influence of corticosteroids (CO) on renal function (RF) and proteinuria (PR) in pts with IgA nephropathy (IgA). Fifteen pts (male 10, female 5, mean age 37.93±9.84 years) were treated with 1 mg/kg/d oral prednizolone for 3 months, which was gradually reduced and stopped over a 3 months period. After completing therapy all pts had a follow up for 30 months. Serum creatinine (CR) and 24-hour PR were determined at the beginning (baseline) and stopping (stop) of therapy and at the end of the 6th, 12th, 18th, 24th and 30th month of the follow up period. The results of statistical analysis by ANOVA are summarised in the table.

	CR (mg/dL)	PR (g/24hr)
Baseline	1.5±0.3	2.0±0.9
P	<0.001	<0.001
Stop	1.1±0.2	0.4±0.3
Follow up (months)		
p	NS	NS
6	1.2±0.3	0.4±0.4
p	NS	NS
12	1.2±0.2	0.5±0.4
p	NS	NS
18	1.2±0.3	0.5±0.3
p	NS	NS
24	1.2±0.2	0.4±0.3
p	NS	NS
30	1.1±0.2	0.4±0.3
p	<0.001	<0.001

In conclusion, the short-term administration of CO in pts with IgA and PR results in substantial reduction of PR and improvement of renal function, effects that are mainstained for a long time after the end of therapy period.

Cyclosporine in combination with low-dose methylprednisolone in patients with idiopathic membranous nephropathy and nephrotic syndrome

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PP

In the present study we evaluate the effects of cyclosporine A (CYA) in combination with low dose of methylprednisolone (MP) in patients with idiopathic membranous nephropathy (IMN) and nephrotic syndrome (NS). Eight pts (male 6,female 2, mean age 49,12±16,55 years) with IMN and NS were treated with 3-3,5 mg/kg/d oral CYA and 12,5 mg/d oral MP for nine months. Serum creatinine, albumin, total cholesterol, urate and potassium levels, 24-hour proteinuria and mean arterial pressure were determined at baseline and at the end of months 1, 2, 3, 6, 9. Statistical analysis was performed using the SPSS program. ANOVA for repeated measures was performed to test the timing effect of the studied parameters during the study. A paired t-test was used to compare the differences between the studied parameters at the different time intervals along the study.Results. Serum creatinine, potassium and mean arterial pressure values were kept unchanged throughout the medication period. Serum albumin and urate increased significantly (p=0,015 and p=0,003 respectively) from the first month and remained so until the end of the study. 24-hour proteinuria decreased significantly (p=0,01) from the first month and total cholesterol from the second month (p=0,026) and remained so until the end of the study. Of note, 4 pts, despite the decrease of L, continued to present NS at the end of the study. In conclusion, the administration of CYA and low dose MP in pts with IMN and NS results in substantial reduction of proteinuria and improvement of hypoalbuminaemia and hypercholesterolaemia without changing the renal function and arterial pressure.

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Comparison of oral methylprednisolone with oral cyclosporine and low dose methylprednisolone in idiopathic membranous nephropathy and nephrotic syndrome

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PP

The aim of the study was to compare oral methylprednisolone (MP) with oral cyclosporine and low dose methylprednisolone (CYAMP) in pts with nephrotic syndrome (NS) due to idiopathic membranous nephropathy (IMN). The MP pts group (male 6, female 3, mean age 55.11±14.83 years) were treated with 1.5 mg/kg/48hours oral methylprednisolone and CYAMP pts group (male 6, female 2, mean age 49.12±16.55 years) with 3-3.5 mg/kg/24hours oral cyclosporine in combination with 12.5 mg/24hours methylprednisolone for 9 months. No differences were observed between groups in age and gender. Serum creatinine, albumin, cholesterol and 24-hour proteinuria were considered at baseline and into the medication period. No differences were observed between groups in baseline mean creatinine (1.1±0.4 vs 1.09±0.2 mg/dL), albumin (3.0±0.8 vs 2.65±0.8), cholesterol (368±79 vs 445±98 mg/dL) and proteinuria (7.7±4.8 vs 11.45±4.8 g/24hours). Statistical analysis by ANOVA showed significant increase of mean serum albumin since the third month in MP group and since the first month in CYAMP group, significant decrease of mean serum cholesterol since the fifth month in MP group and since the second month in CYAMP group and significant decrease of proteinuria since the fifth month in MP group and since the first month in CYAMP group. Mean serum creatinine was kept unchanged in both groups. No differences in parameters studied were noted between groups during the study period. In conclusion, MP and CYAMP therapy in pts with NS due to IMN improves similarly hypoalbuminaemia, hypercholesterolaemia and proteinuria without changing renal function. The only difference was the earlier response of CYAMP group pts.

The influence of angiotensin-converting enzyme inhibitor lisinopril in patients with idiopathic membranous nephropathy and nephrotic syndrome

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OP

The study was undertaken to evaluate the effects of lisinopril (LN) in pts with idiopathic membranous nephropathy (IMN) and nephrotic syndrome (NS). 13 pts (male 6, female 7, mean age 52.1±15.3 years) were treated with 5-10 mg/d of LN for 9 months. Serum creatinine (CR), albumin (AL), total cholesterol (CHO), 24-hour proteinuria (PR) and mean arterial pressure (MAP) were determined at baseline and at the end of months 1,3,5,7,9 during the medication period. The results of statistical analysis by ANOVA for repeated measures are shown in the table

	CR(mg/dl)	AL(g/dL)	CHO(mg/dL)	PR(g/24h	MAP(mmHg)
Baseline	1.27±0.48	2.27±0.41	347.38±81.44	4.82±2.26	107.15±11.93
Months					
1	1.25±0.43	2.50±0.48	342.76±108.6	2.97±1.08	95.76±7.18
3	1.26±0.40	2.63±0.50	326.23±89.04	2.39±1.05	95.15±7.43
5	1.27±0.41	2.70±0.55	313.76±90.17	2.15±0.81	94.92±6.40
7	1.27±0.39	2.93±0.52	284.23±92.08	2.03±0.93	94.61±6.91
9	1.30±0.39	3.09±0.59	276.53±69.92	1.83±0.72	95.61±6.42
p: 1-baseline	NS	0.002	NS	0.002	<0.001
p: 3-baseline	NS	<0.001	NS	0.001	<0.001
p: 5-baseline	NS	<0.001	0.013	0.001	<0.001
p: 7-baseline	NS	<0.001	<0.001	<0.001	<0.001
p: 9-baseline	NS	<0.001	<0.001	<0.001	<0.001

It should be noted that, despite the reduction of PR and increase of AL, 10 pts had higher than 1.5 g/24hour and 6 of them AL lower than 3 g/dL at the end of the study. In conclusion the administration of LN in pts with IMN and NS results in substantial reduction of PR and increase of AL from the 1st month and reduction of CHO from the 7th month without changing the renal function. These changes seem to be related with the arterial pressure control.

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Comparison of the influence of ace inhibitor lisinopril and ATII receptor antagonist losartan in patients with idiopathic membranous nephropathy and nephrotic syndrome

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OP

The aim of the study was to compare the effects of lisinopril (LN) and ATII receptor antagonist losartan (LS) in pts with nephrotic syndrome (NS) due to idiopathic membranous nephropathy (IMN). 27 pts (male 13, female 14, mean age 51.3±15.4 years) were treated with LN (group A, 13 pts, male 6, female 7, mean age 52.1±15.3 years) and LS (group B, 14 pts, male 7, female 7, mean age 50.5 ±15.5 years) for nine months. At the beginning and during the medication period mean serum creatinine (CR), albumin (AL), total cholesterol (CHO) as well as 24-hour proteinuria (PR) and mean arterial pressure (MAP) were determined. In both groups it was noticed significant increase of AL levels ($p<0.0001$ and $p<0.0001$ respectively) and decrease in PR ($p<0.0001$ and $p<0.0001$ respectively) at the end of the study. CR levels were not changed in both groups ($p=0.81$ and $p=0.40$ respectively). CHO levels decreased in group A ($p<0.0001$) and it was kept unchanged in group B ($p=0.23$). Statistical analysis of data evolution was performed with ANOVA for repeated measures to compare the parameters' changes between the two groups throughout the medication period. It was found no statistically significant difference between the two groups in evolution of CR ($p=0.32$), AL ($p=0.29$), CHO ($p=0.24$), PR ($p=0.41$) and MAP ($p=0.61$) levels. In conclusion, ACE inhibitors and ATII receptor antagonists administration in patients with NS due to IMN results in similar effects on renal function, hypoalbuminaemia, hypercholesterolaemia, proteinuria and arterial pressure.

The effects of ATII receptor antagonist losartan in patients with nephrotic syndrome due to idiopathic membranous nephropathy

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PP

The purpose of this study was to evaluate the influence of ATII receptor antagonist losartan on renal function, hypoalbuminaemia, proteinuria and arterial pressure in pts with nephrotic syndrome (NS) due to idiopathic membranous nephropathy (IMN). Fourteen pts (male7, female 7, mean age 50.5± 15.5 years) with IMN associated with NS were treated with 50-100 mg/d oral losartan for 12 months. At the beginning of therapy (time 0) and at the end of months 1 (time 1), 5 (time 5), 9 (time 9) and 12 (time 12) we determined serum creatinine (CR), albumin (AL), cholesterol (CHO), 24-hour proteinuria (PR) and mean arterial pressure (MAP). The mean values of the parameters are shown in the table

Time	0	1	5	9	12
CR(mg/dl)	1.12±0.36	1.18±0.25	1.12±0.23	1.18±0.21	1.17±0.21
AL(g/dl)	2.93±0.40	3.26±0.48	3.54±0.48	3.54±0.42	3.70±0.42
CHO(mg/dl)	305±58	284±79	277±86	269±84	265±86
PR(g/24hr)	4.56±1.1	3.26±1.34	2.66±1.84	2.67±2.03	2.40±1.96
MAP(mmHg)	104±10	100±5	97±6	97±6	95±6

It was noticed statistically significant decrease of PR ($p<0.001$) and MAP ($p<0.02$)at time 1 and increase of AL at time 1 ($p<0.001$). These changes were maintained stable until the time 12.CR and CHO were kept unchanged. At the end of the study, 8 of the pts presented PR higher than 2g/24hr and 3 of them had nephrotic range proteinuria. Our results suggest that the administration of losartan in pts with NS due to IMN results in improvement of proteinuria and hypoalbuminaemia without changing the renal function.

Quantitive evaluation of proteinuria by estimation of the protein/creatinine ratio in a random urine sample

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PP

The aim of the study was to evaluate the severity of proteinuria (PR) using the protein/creatinine ratio (P/Cr) in a random urine sample (RUS). In 45 pts (male 28, female 17, mean age 50.68±18.26 years) with PR of various causes we measured the 24-hour protein excretion per 1.73 m2 of body surface (PR/24h/1.73 m2) and, during the same day, the P/Cr in three different urine samples (8am,12pm,4pm). The PR/24h/1.73 m2 was defined as mild (<1g), moderate (1-3.4g) and severe (>3.4g) in 7, 27 and 11 pts respectively. The P/Cr sensitivity was found 86-100% in the mild, 78-100% in the moderate and 73-82% in the severe PR while the specificity 84-100%, 78-83% and 100% respectively. By the multivariant analysis for the PR/24h/1.73 m2 and factors sex, renal function (RF) and method of estimation of urine protein (24h, 8am,12pm,4pm) we found a significant

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impact of the pts' stratification according to RF [Creatinine Clearence (ClCr)]: >70ml/min, 10-69 ml/min and <10ml min. Particularly, the pts with ClCr>70 ml/min had significantly lower PR but the P/Cr in urine samples at 8am,12pm and 4pm had no difference (2.4±1.7 , 2.4±1.7, 2.4±1.7 respectively). Moreover, investigation by multiple linear regression for RF with dependent variable the PR/24h/1.73 m2 and independent the P/Cr in the different times showed that the PR/24h/1.73 m2 can be predicted by the P/Cr either in the morning or the mid-day urine sample. We concluded that the degree of PR can be evaluated by calculating the P/Cr in a RUS collected at any time from morning until mid-day.

Acute renal failure due to rhabdomyolysis in narcotic drug users

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OP

The aim of this study was to evaluate the severity of rhabdomyolysis (RM) and acute renal failure (ARF) in narcotic drug users (NDU). Eleven pts (male 9, female 2, mean age 28.7±5.0 years) with RM associated with ARF were classified in two groups; A:6 users of heroin and B:5 users of drug other than heroin. The severity of RM was evaluated by estimation, on admission, of serum CPK, SGOT, LDH, phosphorus (P) and Calcium (Ca) and by the presence of paraplegia (PPL) and the severity of ARF by estimation of serum creatinine (CR) and the presence of oligoanuria (OA) on admission, the days of hospitalization (DH), the total courses of hemodialysis (THD) and the total of pts who took blood transfusions (BT). The results of this study are shown in the tables I and II .

Table I. Severity of RM

CPK(U/L)	SGOT(U/L)	LDH(U/L)	P(mg/dL)	Ca(mg/dL)	PPL(n)	
Group A	135453±79144	1868±1190	25542±20873	9.32±1.35	6.60±0.94	4
Group B	39000±13638	390±152	1660±1425	5.58±2.05	7.80±0.52	0
p	0.045	0.042	0.035	0.005	0.032	<0.05

Table II. Severity of ARF.

CR(mg/dl)	OA(n)	DH	THD	BT(n)	
Group A	6.28±0.75	5	25.0±11.52	9.0±5.51	5
Group B	3.28±3.04	1	9.4±7.92	1.81±4.02	1
p	0.042	<0.05	0.031	0.038	<0.05

The results of this study suggest that both RM and ARF are more severe in heroin users than in users of other narcotic drugs.

HLA antibodies in kidney transplantation

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PP

Detection and characterization of HLA class I and class II antibodies in sera of potential kidney transplant recipients and exclusion of mismatches for these alloantibodies are key succes factors for a good graft outcome. Despite optimal HLA matching and a negative serological crossmatch, confrontation with allogeneic antigens in transplantation can lead to an alloimmune response resulting in adverse events. Recent advances in the techniques used to detect anti-HLA antibodies as well as a substantial number of studies show an association of post-transplantation alloantibodies with increased acute and chronic rejection and decreased graft survival in kidney transplant. Detailed analysis of humoral sensitization in the posttransplant period may give some insight into the mechanism of graft rejection. Antibodies to both HLA class I and class II antigens seem to be detrimental. Antibodies of the IgG isotype and possibly the IgM isotype were clinically relevant. The specificity of antibodies detected in the serum of rejecting patients were often not donor specific, presumably because they were absorbed by the rejecting organ. Donor-specific antibodies were associated with rejection and graft loss. Therefore, HLA antibodies could be used as a predictive parameter for patient alloreactivity that may have the ability to distinguish graft disfunction due to immunologic and non-immunologic causes. The correlation of HLA antibodies with chronic rejection may have profound clinical significance. Antibodies may act as a critical trigger for rejection of kidney allograft and may serve as early indicator of a slowly smoldering chronic rejection. The effectiveness of various drugs on chronic rejection should be evaluable by their effects on antibody production.

Urinary infections in patients with endemic nephropathy and renal stones in region of Lazarevac during period of 1998-2002

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PP

We were investigated the frequency of urinary infections at 90 patients with endemic nephropathy. The patients were divided into 3 groups of 30 patients, according to renal failure. The criteria for urinary infections was more than 3 significant urinary culture per year for each investigated year. In every group of 30 patients there were 10 of them with re-

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nal stones too (renal stones > 5 mm, by echo diagnosis). In the first group were the patients with renal hypofunction (creatinin up to 150 umol/l and creatinine clearance < 80 ml/min). In this group 5 patients (3 women and 2 men) had significant urinary culture - 16.66%. Among patients with renal stones there were 4 of them having urinary infections - 40%. In the second group were the patients with renal hypofunction (creatinin from 200 to 250 umol/l and creatinine clearance < 60 ml/min). In this group 4 patients (2 women and 2 men) had significant urinary culture - 13.33%. Among patients with renal stones there were 4 of them having urinary infections - 40%. In the third group were thethe patients with developed renal failure (creatinin more than 500 umol/l and creatinine clearance < 30 ml/min). In this group 6 patients (4 women and 2 men) had significant urinary culture - 19.99%. Among patients with renal stones there were 5 of them having urinary infections - 50%. During 5 years of observation among 90 patients, there were 15 of them (9 women and 6 men) with significant urinary culture - 16.65%. The most common reason of urinary infections were: Escherichia coli 37.09%, Proteus mirabilis 23.87%, Klebsiela 12.58% and Enterococcus 10.96%. Renal failure did not have significant influence on frequency if urinal infections in observed groups. On the contrary, urinary infections together with renal stones were significantly present in all of 3 observed groups.

Syndroma Frasier: glomerulopathy and disgenesis ovary caused by the mutation of WT1 gene

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PP

Syndroma Frasier is charakterized by pseudohermaphroditism and by progresive glomerulopathy followed by renal failure after the eighth years of life.It is caused by the mutation of WT1 gene on intron 9.The disgenesis of gonads significally increases the risk for appearance of gonadoblastoma.We showed in our case report a ten years old girl with proper female exterior genitals, 46XY cariotype and nephrotic syndroma.The first symptoms of glomerulopathy appeared when she was 3,5 years old in the form of nephrotic syndroma (NS), that was resistent on corticosteroide therapy.So the percutane renal biopsy has been done but the corresponding sample hasn`t been got.As a rebiopsy hasn`t been accepted, the girl was treated by ciclophosfamide and than by Cyclosporin A.None of the therapies weren`t successful.The cariotype has been done and 46XY has been found.The genetic analysis has been made in Paris and the mutation T->C, in intron 9, has been found on the position +2.By echosonography and laparascopic examination of internal genitals their disgenesis has been proved. The renal rebiopsy showed the focal segmental glomerulosclerosis. The signes of renal failure has been existing since 1 year ago.The enforced imunosupresive therapy in syndromic glomerulopathy is without any effects.That`s why it shouldn't be applied and unwanted effects would be avoid.

Causal and ambulatory blood pressure monitoring in children with renal scarring

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PP

Renal scarring is the most common cause of hypertension in children, and it is a crucial determinant of the rate of progression of renal disease. The aim of this study was to assess BP in children with renal scarring by ABPM and CBP and to evaluate which of these methods had greater clinical significance. We prospectively investigated 35 patients (26 girls and 9 boys, age 3 – 18 years, 10,4 +/-3,9, mean +/- SD) with renal scarring documented by DMSA scanning. Fourteen patients had vesico-ureteric reflux and 21 patients had mild to moderate obstructive uropathy. All patients had normal renal function, while 22.8% had increased proteinuria. ABPM was done using a Spacelabs 90207 ocilometric device. CBP was averaged using three separate clinical BP measurements. RESULTS: While 45.7% of patients were classified as hypertensive by ABPM, 22.8% of the CBP measurements were above the 95th percentile. Based on the findings using both methods 14.3% of the patients were found to be hypertensive. Non-dipping was the most common BP alteration, and was detected in 68.6% patients. Nocturnal hypertension was present in 37,1 % patients. CONCLUSION: Circadian BP alteration is the most common BP abnormality in children with renal scarring. ABPM was found to be superior to CBP in discovering hypertension in children with renal scarring. Therefore, ABPM is suggested to be used as the standard method for BP evaluation in children with renal scarring.

Hypercalciuric value of random urine sodium/potassium ratio and relation with salt and potassium intake

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PP

Background: A few article on adults had shown to an inverse correlation between urinary K and urinary Ca excretion. Previous investigation in children also found inverse

correletion between two, but concluded that it is limited number of children. Aim: The aim of the present study was to investigate the value of urinary Na/K ratio versus Ca/Cr ratio for diagnosing hypercalcuria in healthy children and to evaluate correlation between Ca/Cr and Na/K ratio and to determine the efficacy of low-Na/high-K diet on both Ca/Cr and Na/K ratio in patients with hypercalcuria. Material and methods: The study consisted of two parts. In the first part 135 children (64 girls, 71 boys) whose age ranged between 7-12 (mean. 9.3 + 7.4) years old were assigned in the study. The urinary excretion of Na, Ca, K and Cr was evaluated in spot urine samples for Ca/Cr (mg/mg) and Na/K (mEq/mEq) ratio. In the second part, 133 children with idiopathic hypercalcuria (71 girls, 62 boys) whose age ranged between 1-19 (mean 10.2 + 10.34) years were investigated to determine efficacy of low-Na/high-K diet. Low Na (800-1200 mg/day) and high K (2000 mg/day) diet was given for 12 months and concomitantly their intake of daily water was increased 1.5 times normal. Values for both plasma and spot urine samples Na, K, Ca and P levels of all participants were obtained before treatment and thereafter at monthly during the study period and Ca/Cr and Na/K ratios were calculated. Hypercalcuria was defined as urinary Ca/Cr ratio upper than 0.21 and urinary Ca excretion upper than 4 mg/kg/day. Na, K, Ca and Cr analyzed by Falcor 300 device (Menarini Diagnostics Corporation kits). Results: Healthy children's urine Ca/Cr ratio was 0.10 + 0.11, urine Na/K ratio was 3.1 + 2.0. and significant correlation was found between urine Ca/Cr and urine Na/K ratios ($r=0.53$, $p<0.001$). Hypercalcuria coincides with a Na/K ratio of 5.4 (sensitivity 83%, specificity 90%) in healthy children. In second part of the study, urine Ca/Cr ratio was 0.51 + 0.74 and urine Na/K ratio was 5.4 + 3.2 and correlation was found between urine Ca/Cr and Na/K ratios ($r=0.17$, $p=0.004$) in patients with idiopathic hypercalcuria. Both Ca/Cr and Na/K ratios were decreased significantly after the first month with dietary therapy ($p<0.001$). Conclusion: Urinary Ca/Cr ratio is well correlated with urinary Na/K ratio both in healthy and idiopathic hypercalcuric children. Thus urinary Na/K ratio may serve as an ancillary diagnostic tool for diagnosis and follow-up of children with idiopathic hypercalcuria. Prolonged calcium restriction is harmful in children with idiopathic hypercalcuria. Dietary compliance is low with Na restricted diet but high K diet may cause better dietary compliance with improvement in taste.

Nephrotic flares during cytotoxic therapy of lupus nephritis: renal outcome

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PP

Lupus nephritis is a heterogeneous disease with the large inter- and intra-individual variability of the clinical course. The great majority of patients who progress to end-stage renal failure have either WHO class-III or class-IV glomerulonephritis. The major aim of treatment is to reduce the symptoms and halt progression of the disease. We analysed the five-years renal survival of patients with WHO class-IV glomerulonephritis during the last ten years. Patients were treated with a long term, high dose intravenous pulse cyclophosphamide regime combined with glukokorticoides. Seventeen of 24 patients with proliferative lupus nephritis (all of them were woman) achieved remission after mean period of four months administration therapy. "Nephritic flares" were occurred during the period of quarterly pulses of cyclophosphamide. Intensification of immunosuppressive treatment is based on changes of clinical parameters, with doses according the white blood cells count. If the leucocytes count decreases below 3 000 per mm3 , instead cyclophosphamide, intravenous pulses of methylprednisolone were administrated alone. Our results suggested that five-years renal survival was 79% in the group of patients. All patients (five of 24) treated with methylprednisolone pilses as monotherapy during renal flare progressed to end-stage renal failure during five years. Therefore, next investigation have to identify specific marker which will precede renal flare and suggest intensification therapy on time. Anti C1 antibodies might be helpful, next studies will show.

Systemic sclerosis and nephrotic syndrome. Significance of antiribosomal P antibodies

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PP

The nephrotic syndrome is an extremely rare occurrence in systemic sclerosis (SSc). Here we describe a 42-year-old woman with SSc who develop the nephrotic syndrome along with the expression of antiribosomal P antibodies, but not of anti double-stranded DNA antibodies in her serum. Although a renal biopsy specimen showed minimal changes on light microscopy, immunofluorescence studies showed granular deposition of C3 and IgM in the glomeruli. The patient recovered from the nephrotic syndrome with the decrease in serum antiribosomal P antibodies after the daily administration of 60 mg of prednisolone. It is strongly suggested that antiribosomal P anribodies might have been involved in the development of the nephrotic syndrome in our patient.

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Renal abnormalities in patients with psoriatic arthritis

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PP

Psoriatic arthritis (PsA) is an inflammatory disease affecting mainly the skin and joints. The aim of this study was to investigate the prevalence of, and to identify predictive factors for, renal abnormalities in patients with PsA. 180 patients (69 females/ 111 males, mean age 44,6±13,3 years) with PsA (duration of psoriasis 21,3 ± 14,2 years; duration for joint disease-14,2±8,3 years) were consecutively examined by laboratory analyses and clinically for joint manifestations. Renal function was examined by creatinine clearance. 39 (21,67%) of the patients had renal abnormalities as defined by creatinine clearance below the lower cut off of normal distribution and/or urinary excretion of albumin more than 25 mg/24h. These patients were significantly older at the time of the study, older at joint disease onset, had longer skin disease duration and higher incidence of increased ESR (erythrocyte sedimentation rate) and/or C-reactive protein (CRP) levels. Increased ESR/CRP levels had significantly predictive value in multivariate analysis. The serum level of IgA was increased but did not reach significance. In this study subclinical renal abnormalities was a prevalent finding. Predictive factor was inflammatory activity measured by laboratory variables. There were no predisposing effects of nonsteroidal anti-inflammatory drug or disease modifying antirheumatic drug therapy. From this study we can conclude that renal impairment is a frequent finding in patients with PsA however mild. Progression to more severe affection, e.g. membranous nephropathy, amyloidosis or IgA glomerulonephritis in these patients remains uncertain and is a matter for a follow-up study.

Autoantibodies against C1q: view on association between systemic lupus erythematosus disease manifestation and C1q - autoantibodies

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PP

We studied 42 patients (38 female and 4 male, aged 19-64) with systemic lupus erythematosus. Twenty eight of them (66,66%) have proven with renal biopsy lupus nephritis, 14 of patients (33,33%) have evidence for lupus pneumonitis and 11 (29,19%) – for central nervous system involvement. All patients were tested for both basic and subclass ELISAs for C1qAb using modification of the methods of J.J. Wisnieski and S.M. Jones. Raised C1qAb titres were found in 18 of patients (42,86%). Among all patients with C1qAb 12 had renal manifestation of SLE (83,33% of them had focal or diffuse proliferative glomerulonephritis), 6 - central nervous system involvement and 5 – lupus pneumonitis. Patients with raised C1qAb titres were younger, 7 of them were positive for antibodies to dsDNA. The magnitude of proteinuria was positively associated with the presence of C1qAb. In 7 of our patient was established selective complete C1q deficiency, in two of them there were clinical data for presence of systemic lupus erythematosus in the family. Available sera testing positive for IgG C1qAb were analyzed for C1qAb IgG subclass distribution. Six patients had only IgG2 C1qAb, 3 patients – IgG1C1qAb, and 9 had both IgG1- and IgG2C1qAb. The subset of sera from patients with IgG1- or IgG2C1qAb were assayed for total serum IgG1 (mean 7,9±4,5 mg/ml) and IgG2 (2,6±1,4 mg/ml) levels by radial immunodiffusion. The percentage of IgG2C1q relative to total IgG2 was significantly greater than percentage of IgG1C1qAb relative to total IgG1 (0,03±0,06% vs. 0,01±0,02% respectively, $P<0,005$, t-test). Thus, in our patient population the IgG2 component of the autoantibody response to C1q is disproportionately enriched relative to the overall IgG subclasses distribution, as no alteration in IgG subclass distribution was noted. The C1qAb in our population were predominantly of IgG2 and IgG1 subclasses. The mechanisms mediating autoantibody pathogenicity remain unclear. It has been proposed that C1qAb may act systemically by up-regulating activation of classical complement pathway. Alternatively, C1qAb may act locally within the renal glomerulus to enhance tissue injury initiated by immune complex deposition. The association of C1qAb with proliferative lupus nephritis is now well established, but significance of C1qAb for lupus pneumonitis and cerebrovasculitis is target to future investigations.

Clinical and morphological features of kidney involvement in primary Sögren's syndrome

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PP

Sögren's syndrome is an autoimmune disorder belonging to the group of the chronic systemic rheumatic diseases. The principal target organs are the exocrine glands. Extraglandular manifestations are frequent and may include renal involvement. Our purpose was to examine relationships between the clinical and serological features of the syndrome and the presence of renal disease. We studied the nature of kidney involvement in 46 patients (pts) with primary SS, diagnosed according to the European classification criteria. The patients underwent the routine laboratory tests and renal laboratory investigations. A percutaneous renal biopsy was proposed to pts, presenting with a variable reduction of creatinine clearance, tubular defects, and urinary abnormali-

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ties. Signs of renal involvement, such as urine abnormalities and tubular defects, were most commonly identified in the absence of apparent clinical manifestations. Two pts had overt nephrotic syndrome and 3 pts had a history of recurrent stone disease complicated by nephrocalcinosis. A variable reduction in creatinine clearance (usually slight – range 45-70 ml/min) was found in 6 pts (13,04%). Proteinuria was found in 11 pts (23,91%): in 9 pts - protein excretion was less than 1g/24 h, in 1 patient - 1,5-2 g/24 h and in 2 pts – in the nephrotic range. Nine pts with kidney involvement agreed to undergo renal biopsy. In 6 pts mild to severe tubulo-interstitial nephritis was found - it was characterized by focal or diffuse lymphoplasmocellular infiltrate of mononuclear cells with variable tubular atrophy and mild to intense interstitial fibrosis. Chronic glomerulonephritis was diagnosed in three patients (membranous nephropathy – in 1 and membranoproliferative – in 2 pts). Our study suggests that clinically evident renal disease is rare in pts with primary SS and that the presence of suclinical renal dysfunction, usually ascribed to tubulo-interstitial nephritis of variable degrees, may be detected by means of appropriate tests. The patients with SS showing tubular defects were significantly younger, had a shorter disease duration, a lower creatinine clearance and ANA was more frequent in patients with abnormal tubular tests.

Study on the disorders of coagulation and fibrinolytic systems in predialysis patients with chronic renal failure. comparison between diabetic and non diabetic patients.

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PP

Introduction. Thrombosis is a major complication among the patients with chronic renal failure, so the disorders of coagulation-fibrinolysis system acquire a particular interest. In the present study, the levels of factors that predispose for the appearance of hypercoagulation were investigated in predialysis patients. Material and Method. Fifty-six patients with chronic renal failure and creatinine clearance 5-60ml/min were included. Twenty-five of them were diabetic (group A) and thirty-one non diabetic (group B). Activity of protein C (PC), antithrombin III (ATIII) and free protein S (PS), APC-resistance (in presence of FV-Leiden), activated partial thromboplastin time (aPTT), prothrombin time-international normalized ratio (PT/INR), fibrinogen and D-dimers were measured in venous blood. Results.

	Diabetics	Non-diabetics	P
Age	66,76±7,21	68,48±11,4	0,09
PC (%)	134,77±25,06	115,68±29,88	0,009
ATII I(%)	107,32±17,71	101,67±16,22	0,21
PS (%)	78,34±34,11	75,2±22,45	0,42
Fibrinogen (mg/dl)	483,32±117,77	469,44±106,77	0,94
D-dimers (μg/l)	175,83±189,78	207,43±208,18	0,45

Table I. Levels of measured parameters.

	Diabetics	Non-diabetics	P
PC	36	25,8	0,74
ATIII	16	12,9	0,92
PS	40	51,6	0,77
Deficiency of FV-Leiden	4	6,5	0,83
Fibrinogen	92	93,5	0,88
D-dimers	48	51,6	0,93
PT/INR	0	3,2	0,72
aPTT	12	16	0,99

Table II. Percentage (%) of patients with higher or lower levels than the normal ones.

Conclusion. Numerous abnormalities at multiple levels of coagulation-fibrinolysis system appear in predialysis patients. Hypercoagulation appears both in diabetic and non-diabetic patients in a similar way. The higher levels of PC in diabetics need further investigation. Early anticoagulation treatment in predialysis patients may prevent vascular thrombosis and decrease morbidity.

Is coagulation-fibrinolysis system influenced by the stage of chronic renal failure in diabetic and non-diabetic predialysis patients?

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PP

Renal failure causes both damage on vascular endothelium and enhanced platelet aggregation and consequently activates coagulation system. The aim of the present study was to investigate the possible influence of creatinine clearance (clcr) on coagulation-fibrinolysis system in diabetic and non-diabetic predialysis patients. Fifty-six predialysis patients with chronic renal failure were divided in two groups, similar by means of age: A (25 diabetics), B (31 non-diabetics). Activity of protein C (PC), antithrombin III (ATIII), activity of free protein S (PS), fibrinogen and D-dimers were measured in venous blood. All patients had normal hepatic enzymes and did not received anticoagulation treatment. There were not found statistically significant correlations between clcr and the measured parameters in both groups, with the exception of fibrinogen in group A.

	Diabetics (n=25)	Non-diabetics (n=31)
	Spearman R	Spearman R
Clcr& ATIII	-0,085	0,17

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Clcr& PC	0,25	0,11
Clcr& PS	-0,12	0,09
Clcr& D-dimers	-0,24	-0,01
Clcr& fibrinogen	-0,13	-0,45

Our results have to be considered as preliminary due to the small number of patients. However, different trends were observed in the two groups. Natural inhibitors of coagulation as ATIII and PS were negatively correlated with clcr in group A, while they were positively correlated in group B. This is an indication for a diverse function of coagulation-fibrinolysis system in diabetic predialysis patients. Further research is needed, with larger groups of patients, in order to clarify the impact of renal failure on coagulation-fibrinolysis system, particularly in diabetic predialysis patients.

Effects of different dialysis fluids on peritoneal dialysis patients

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PP

Peritoneal dialysis (PD) represents an important step in the optimization of the whole program of renal replacement therapy. The standard glucose/lactate based dialysis solutions are first choice. Sometimes they may have undesirable side effects or may be not completely adequate to achieve metabolic correction of the patient. Alternative solutions in specific conditions may help to optimize fluid-electrolytes status and reduce the hypertension. Icodextrin, which is a high-molecular weight osmotic agent and induces similar ultrafiltration to 3,6% glucose, may help to minimize glucose load, avoid obesity, progression of atherosclerotic disease and diabetic complications. The solutions which contain amino acids, as a nutricional support and osmotic agent, increase serum albumin and total protein levels in malnourished patients. Bicarbonate-lactate buffered solutions improve patients' acid-base balance without side effects and eliminate peritoneal pain or discomfort. Prescription of advanced new PD-solutions in combination improve the quality of PD-life and preserve the membrane functionality for longer period.

Renal tubulo-interstitial impairment in intermittent porphyria

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OP

Acute intermittent porphyria is a very rare hereditary autosomal disease. That disease occurs in 0.001-0.008% in european population. Acute manifestations of intermitent porphyria are present mainly in women between 20-40 years. Aim of the study was to investigate the kidney function in patients suffering from acute intermittent porphyria. During 15 years we investigated and treated 7 patients (6 women, 1 man), mean age was 40 years. Characteristic clinical symptoms (abdominal pain, neurological seizures, restless, muscle cramps) and laboratory signs (presence of porphobilinogen in urine, urinary 5-aminolevulinic acid: 26.1±2.5mg/L, urinary coproporphyrine: 0.180±0.02 mg/L) were present in all patients during acute attacks of the disease. Examination of kidney function was performed in clinical remission (Table). All patients were treated by phenothiazines, i.v. infusion of glucose, vitamin B1 and B6. In addition i.v. Hemearginate (Normosang, Leiras, Oy) was repeatedly administered in 5 patients during acute porphyric attacks.

Sex,age (year)	Protein-uria(g/24hr)	β2-μG (mg/L)	β-NAG (?kat/L)	GFR (ml/s)	Le-uria in urine (mil/24hr)	Bacteri-uria in urine	Investi-gation of renal CA	Isotopic renogra-phy
1.F,31	0.20	0.11	0.070	1.20	43	1,000/ml	Hypos-thenuria	impair-ment of T-EP of RK
2.F,33	0.10	0.09	0.040	1.45	15	1,000/ml	Hypos-thenuria	Normal range
3.F,37	0.10	0.05	0.040	1.50	negat.	negat.	normal range	impair-ment of T-EP
4.F,43	0.23	0.03	0.060	1.40	12	1,000/ml	Hypos-thenuria	normal range
5.F,45	0.12	0.12	0.040	1.95	negat.	1,000/ml	Hypos-thenuria	impair-ment of T-EP of RK
6.F,39	0.10	0.12	0.040	1.23	negat.	negat.	normal range	Impair-ment of T-EP of RK
7.M,55	0.30	0.09	0.050	1.70	negat.	negat.	Hypos-thenuria	impair-ment of T-SP and EP

μG – microglobulin, NAG – N-acetyl-β-D-glucosaminidase, Le – leucocyte, CA – concentration ability, T-EP – tubular excretory phase, RK – right kidney, T-SP – tubular secretory phase.

Conclusions: 1. Long-term survival of 7 patients suffering from acute intermittent porphyria was observed despite many acute attacks during 15 years. 2. The most effective therapy was repeated i.v. administration of Hemearginate during acute attacks. 3. Tubulo-interstitial impairment of kidney function in 5 patients during clinical remission of acute intermittent porphyria was found.

The influence of continuous ambulatory peritoneal dialysis on pulmonary functions

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OP

CAPD is the continuous eliminating therapeutic method used in patients with chronic renal failure. The aim of the

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study was to investigate the influence of CAPD on pulmonary functions. Basic pulmonary functions and acid-base balance were investigated in 15 stable CAPD patients using peritoneal dialysis solution with 1.5% or 2.5% glucose during 6 hours of peritoneal dialysis. The patients were not smokers and they suffered from neither lung disease nor ischemic heart disease. Pulmonary functions were performed by Masterlab (Jaeger), using a single–breath technique. Acid–base balance was determined by Radiometer ABL 330. Results:

Parameter	Reference range	0	6 hr
Hb (g/L)	130–160	117.2±18.1	117.2±18.2
FVC (%pred.)	>80	92.1±15.3	92.1±15.4
FEV1 (%pred.)	>80	84.2±22.0	84.8±22.8
TLC (%pred.)	>80	92.3±8.6	93.0±9.8
DLCOc (%pred.)	>80	74.5±13.3	72.5±12.7
pH	7.36-7.44	7.41±0.05	7.40±0.04
pCO2 (kPa)	4.80-5.80	4.77±0.05	4.95±0.05
HCO3- (mmol/L)	22-26	21.9±2.0	22.4±2.7

%pred. = (actual value/predicted value) x 100 Conclusions: 1. Decrease of diffusion capacity of the lungs was found in all patients and depended on the degree of anaemia and on the slight pulmonary interstitial edema. 2. Acid-base balance during CAPD was on the lower margin of reference range. 3. No influence of single peritoneal dialysis on pulmonary functions and acid-base balance was found.

Angiotensinogen polymorphism M235T in patients with essential hypertension from the republic of Macedonia

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PP

Angiotensinogen polymorphism M235T is the most common genetic risk factor for essential hypertension. According to literature, the prevalence of this polymorphism in Europe is 30-60% among patients with essential hypertension (EH). European studies suggest 15-40% prevalence of this polymorphism in healthy population. The aim of this study was to determine the prevalence of angiotensinogen polymorphism M235T in patients with EH and in healthy population from the R. Macedonia, to determine whether there was a statistically significant difference between these groups, and to explore clinical aspects of the hypertension in the analyzed group. The study was designed as a retrospective-prospective case-control study. We analyzed 40 patients and 40 healthy individuals. We postulated strict inclusion criteria for patients regarding the family history of EH, the level of blood pressure, BMI and acquired risk factors, and applied therapy. The polymorphism was identified with PCR-RFLP method, using Tth 111 I restriction enzyme. The prevalence of M235T in patients with EH was 55%, and in the control group it was 32,5%. There was a significant difference in M235T prevalence in both groups ($p<0.04$). This result suggests the role of angiotensinogen polymorphism M235T in ethiopatogenesis of EH in patients from the R.Macedonia.

Immunohistochemical detection of c-met/HGF receptor in glomerulonephritis

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PP

Dysfunction of cell-cell regulation in the kidney due to decreased local hepatocyte growth factor (HGF) production may be an initial trigger for the development of glomerulonephritis (GN). The proto-oncogene c-met encodes a transmembrane tyrosine kinase receptor for HGF; the latter may function as a negative regulator of activated mesangial cell proliferation. C-met in mesangial cells is considered a functional receptor for at least HGF secretion in experimental models. Using an appropriate rabbit antibody, we investigated the immunohistochemical expression of c-met in renal biopsies from 100 patients with varous types of GN. Patients' clinical data (i.e. haematuria, proteinuria, hypertension and Creatinine serum levels) had been collected. The examined biopsies were divided in two main groups (primary-secondary GNs and proliferative - non-proliferative GNs). Twenty normal controls were also examined. C-met was expressed in glomerular epithelial cells, in mesangial cells and in tubules in a considerable number of pathological as well as normal specimens. The respective percentages for c-met immunopositivity incidence in the GN specimens were as follows: 43.9% (as far as podocytes' staining is concerned), 73% (with regard to parietal epithelium), 29% (mesangial cells), 73% (proximal tubules), 11% (distal tubules) and 58% (collecting tubules). Moreover, with regard to pathologic lesions in the diseased glomeruli, we noticed that c-met was often detected in microadhesions (16/25, 64%) and atrophic tubules (30/41, 73.2%) and, less frequently, in sclerotic and hyperplastic areas (11/33, 33.4% and 13/67, 19.4% respectively). No statistical differences emerged among the various GN groups with regard to c-met immunopositivity and no statistical association was observed between the clinical severity of GN and c-met immunoexpression either. C-met/HGF receptor is indeed detectable in various types of renal cells including glomerular and tubular epithelial cells in GN specimens and normal controls. As far as the GN cases are concerned, c-met was commonly expressed in microadhesions and atrophic tubules and so it appears to be involved in some stages of the fibrotic procedure.

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Genetic factors influencing long-term graft survival in kidney transplantation

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OP

The success of organ transplantation is influenced by a complex of genetic and other factors. Many studies have shown that the degree of HLA compatibility between the donor and the recipient is an important predictor of transplant outcome. The implementation of accurate and reproducible DNA-based typing methods is of great relevance to assess precisely the HLA compatibility between the donor and the recipient and the allele and haplotype variation in different ethnic groups. Studies in the Bulgarian population on HLA class I and class II polymorphism by DNA methods showed a significant diversity. The highest level of heterogeneity was observed within allele groups A*02, B*27, B*35, B*44, DRB1*04 and DRB1*13. Although the most frequent alleles and haplotypes in the Bulgarian population are characteristic for other European populations, particularly for those located in the Southern part of Europe, some Oriental and West European alleles and haplotypes were detected. Additionally alleles: A*0211, A*0217, A*3004, A*8001, B*1803, B*2707, B*3508, B*4405, B*4406, B*7301, DRB1*0410, and DRB1*1315 were identified in our population with a frequency ranging from 0.009 to 0.036. These allele variants are considered as rare for Europeans and their occurrence could be correlated to specific ethnic groups. Comparisons with other populations by phylogenetic and correspondence analyses showed that Bulgarians are more closely related to Macedonians, Greeks, Romanians, Croatians, Slovenians and Cretans than to other European populations and Middle East Mediterraneans. The studies of HLA diversity in different ethnic groups could significantly improve the prospects for identifying well-matched donors and to establish donor selection criteria for patients with rare alleles and haplotypes. However, for some of these patients an HLA matched donor could not be found in a local registry and it is relevant to use a new algorithm to determine HLA compatibility at structural level. Our studies on HLA class I and class II compatibility defined at different levels in kidney transplantation showed a positive effect resulting in decrease of recipients alloreactivity and risk of rejection, and better long-term allograft survival. A strategy for improving long-term graft survival in kidney transplantation is discussed. In addition to HLA, other genes such as cytokine genes are important in transplantation. Monitoring of these additional genetic markers is useful in the early diagnosis of post transplant complications.

Survival and complications of temporary haemodialysis catheters

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PP

Need for insertion of central venous catheter (CVC), as temporary vascular access for dialysis is very common. In order to examined immediate and late complications of CVC a prospective study of 104 CVC, 64 internal jugular venous (JVC), and 40 femoral venous catheter (FVC) inserted in 95 patients in 3 years period, was undertaken. All catheters were placed by same nephrologist, using the guide-wire technique according to Seldinger. Twenty-five patients had early complications (bleeding, haematoma) after the CVC placement: 8 after FVC and 17 after JVC placement ($p>0.05$). Two patients developed femoral venous thrombosis after FVC insertion. Catheter failure (thrombosis, extrusion, kinking) occurred in 14% of patients with JVC, and 22.5% patients with FVC ($p>0.05$). The incidence of bacteremia was 15.6% and 12.5% for JVC and FVC, respectively. Staphylococcus aureus was the most frequently isolated species. There was not significant difference in duration of cannulation (JVC: range 1-83 days, mean 21days; FVC: range 2-56 days, mean 16 days). Number of performed dialysis was significantly higher in the case of JVC ($p=0.05$). Actuarial survival for JVC was approximately 87%, 74% and 55% at 7, 14 and 21 days, and 84%, 61% and 47% for FVC ($p>0.05$, Log-rank test) . In conclusion, according to our experience both place for catheter insertion can recommended with same safety and same risk of possible complication.

Could Balkan nephropathy be a disorder of renal embryogenesis?

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OP

While multiple studies have focused on a possible role of toxic, genetic or infectious factors in the pathogenesis of Balkan endemic nephropathy (BEN), none has yet explored an embryogenetic disorder as a cause of BEN. Here we summarize the available evidence suggesting that the epidemic of Balkan nephropathy could have been caused by an impact on embryogenesis, which has affected newborns only and which has acted only during a limited period of time. In such a scenario we would observe a wave of a large number of patients followed by a relatively more prolonged period of decreasing prevalence and increasing mean age of this patient population, as the affected patients grow older and succumb to their disease or age. All of these consequences are now clearly evident by looking back at the years passed and are strongly supported by a very recend screening over 3634 inhabitants of the most affected en-

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demic areas in Bulgaria, performed by Tz. Dimitrov, and presented at this congress, showing markedly decreased prevalence and increased mean age of the patient population. Furthermore, we summarize the available evidence that Balkan nephropathy is a type of a generalized proximal tubular disorder (Fanconi syndrome) manifested by tubular proteinuria, aminoaciduria, glucosuria, uricosuria, potassium wasting, sodium wasting, hypomagnesemia, hyperchloremic acidosis, and preserved urinary acidification. There are more than 35 disorders, which can cause a proximal tubular disorder, and among those are a number of disorders of the renal development. We can only speculate about the exact nature of the impact on renal embryogenesis, which could have caused the epidemic of Balkan nephropathy in the early 20-ies of the 20-th century, but it could be related to the mass starvation during the Balkan wars, as well as to the great influenza epidemic, which struck a large human population during those years. In addition, a genetic predisposition also cannot be excluded.

Left ventricular hypertrophy in patients with chronic uremia

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PP

Cardiovascular disease is leading cause of death in end-stage renal failure, representing 40-50% of overall mortality. Left ventricular hypertrophy (LVH) is a frequent occurence in patients with end-stage renal disease and is an important adverse prognostic indicatgor. Echocardiography detected in LV hypertrophy was in fact in 50-70% of patients sorrining renal replacement therapy and in 60-90% of those on regular dialysis treatment. Echocardiographically examined 48 patients (from total 52 patients) with end-stage renal failure. LV hypertrophy in 41% and LV dilatation in 28% of end-stage renal failure, LV hypertrophy usually results from an association of LV pressure and volumen overload. The regression of LV hypertrophy in chronic renal failure is a complex process (correcting anemia with r-HU-EPO, long term treatment with the ACE inhibitors in arterial hypertension).

Distribution of endemic upper urothelial tumors and Balkan endemic nephropathy

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PP

Objectives: Crossection of teritorial distribution of endemic upper urothelial tumors (UUT) in relation to distribution of balkan endemic nephropathy (BEN). Materials and Methods: From 1963 to 1998, 1033 patients with UUT were treted. They lived in region of 808 settlements. The data source on teritorial distribution of BEN was epidemiological studies. Crossection of UUT and BEN distribution obtained from this data was demonstrated on the map. Results: From 808 settlements of region in question BEN was present in 181 settlements (22.4%). Endemic UUT was registered in 285 settlements (35.3%). In the remaining 457 settlements (56.6%) none of these two were registered. From 351 settlments (43.4%) where one or both diseases were registered, in 170 settlements (48.4%) only endemic UUT were registered, in 66 settlements (18.8%) only BEN was registered and both UUT and BEN were registered in 115 settlements (32.8%). Disscusion: Teritorial distribution of endemic UUT in relation to BEN exhibits these caracteristics: in 115 settlements (32.8% affected settlements) endemic UUT and BEN were found together, on the contrary in the remaining settlements only BEN (66 settlements, 18.8%) or only endemic UUT (170 settlements, 48.4%) were found. These data and exhibited caracteristics have thrown the new light on our observations of teritorial distribution of endemic UUT in relation to BEN and our up to now theories on the same etiopathogenesis of these two diseases.

Immunological phenomena in patients with diabetic nephropathy

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PP

Diabetic nephropathy (DN) is one of the main causes of chronic renal failure. A wide range of autoantibodies has been described in DN patients, associated with the progression and duration of diabetes, diabetic complications and with the development of additional autoimmune glomerular disease superimposed upon DN. The aim of our study was to investigate the prevalence and clinical significance of some immunological markers in DN patients. We investigated the prevalence of ANA, ANCA, anticardiolipin, anti-beta-2-glycoprotein-I, anti-ds-DNA, anti-ss-DNA, Sm, RNP, Ro, La antibodies, serum cryoglobulin levels, RF, C3 and C4 complement fractions, HBs antigen, and anti-HCV antibodies in 16 patients with biopsy-proven DN (12 female and 4 male, mean age 45.6+/-13.6 years). The results were compared with the histological activity and chronicity indices and with the clinical and laboratory data. We found positive ANA in 3 patients with type I diabetes and autoimmune thyroid disease (autoimmune polyglandular syndrome type IIIA). ANA correlated with the histological activity index ($p<0.05$) but showed no correlation with the laboratory data and histological chronicity index. All 3 patients were on oral L-thyroxin substitution. ANCA were

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positive in 3 other patients – 1 with type I and two with type II diabetes. ANCA showed no correlation with histological or laboratory parameters. All other autoantibodies, HBs antigen and anti-HCV antibodies were negative, RF, cryoglobulin, C3 and C4 serum levels were within the normal range in all patients. The authors discuss the significance of ANA in patients with DN and autoimmune polyglandular syndromes.

Prevalence of hepatitis C and B in patients under chronic hemodialysis

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PP

In order to determine the prevalence of hepatitis C virus (HCV) and hepatitis B virus (HBV), we studied 60 patients (pts) who were under chronic hemodialysis at our center. The detection of serum antibodies was made by the ELISA technique. There were no other cofactors in pts to elevate the aminotransferase enzymes such as other kinds of hepatitis, hemochromatosis, sarcoidosis, history of recent myocardial infarction, medications etc. Alanine aminotransferase (ALT) level was measured for each patient in 3 consecutive occasions within 12 months and the mean value was recorded in analysis. HCV was confirmed to be present in 22 of pts (36.6%) with mean age 43.7 years (range 41 ± 8.6 years): 9 pts were females and 13 males, while HBV was confirmed to be present in 11 of pts (18.33%) with mean age 39.18 years (range 34 ± 7.3 years): 5 pts were females and 6 males. 8 of the HCV positive pts were noted to have elevated serum ALT values, while 4 HBV positive pts were noted to have elevated serum ALT values. In all pts, positivity of HCV was transfusion-related. Two HBV positive pts were also HCV positive. Clinical outcome was asymptomatic in all cases. Based on these findings, it becomes clear that hepatitis C and B infection is a significant problem in dialysis units playing a pathogenic role in liver disease in hemodialyzed pts. This high prevalence is related to multiple blood transfusions. Every effort must be made for the successful control of this infection, including separation of infected pts from the other pts and reduction of the need for transfusion.

Anticoagulation during high-risk haemodialysis treatment

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PP

Routine haemodialysis requires an anticoagulant agent to avoid clotting of the blood in the extracorporal circulation. However, the systemic anticoagulation can produce dramatic complications in high-risk patients. Consequently, various solutions of this clinical problem have been proposed during the last years. The aim of our study is to share our experience with the different anticoagulation regiments for high-risk haemodialysis treatment. We followed 4154 acute dialysis sessions performed in Dialysis Center of emergency hospital "Pirogov" for a period of 10 years (1993-2002). We traced the evolution of the different ideas about the anticoagulation during the recent years. We analyzed: the ethiology and the course of the dialysis treatment, the anticoagulation regiments, the changes in the clinical and laboratory status of the patients, the complications and the outcome of the treatment. Our results show, that the number of patients undergoing high-risk dialysis is growing and the spectrum of the contraindications for dialysis which concern anticoagulation is decreasing. That gives the physicians more freedom for adequate treatment with acute dialysis.

A study of the total antioxidant status in hemodialysis patients

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PP

Dialysis adequacy, nutritional status and the activation of the oxidative mechanism during hemodialysis, included by the interaction of the blood components with the dialysis membrane, are causes for the accelerated rate of cardiovascular disease in hemodialysis patients. The aim of this study was the global evaluation of the antioxidant system of hemodialysis patients, by measuring total antioxidant status (TAS), and its possible correlation with the dialysis membrane, nutritional status and dialysis adequacy. In 20 stable hemodialysis patients, 8 males and 12 females, mean age 61.4±11.5 years and mean duration of HD 95.8±65.1 months, TAS was assessed before and after two midweek dialysis sessions. We also assessed TAS of 20 healthy controls. We used two different hemodialysis membranes, polysulfone during the first session (TAS1p, TAS2p) and hemophane during the second session (TAS1h, TAS2h). TAS was measured with a chromatographic method. We also determined Kt/V of the first and second dialysis session, nPCR, BMI, serum ferritin, albumin, transferin and iron. Our patients' TAS1p and TAS1h was within normal range TAS1p=1.41±0.16 and TAS1h=1.42±0.16 (normal values = 1.3-1.7). A significant decrease of TAS was observed at the end of each session (TAS2p=1.17±0.2 / $p<0.001$, TAS2h = 1.17±0.13 / $p<0.006$). We also found a statistically significant difference between the DTAS (TAS1-TAS2) of the two membranes DTASp=0.24±0.14 / DTASh=0.25±0.13 ($p<0.03$). We noticed a positive correlation between MTAS (TAS1p+TAS1h/2) and serum trans-

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ferin (p<0.01), a negative one with iron overload (serum ferritin > 350ng/ml) (p<0.04) and with age (p<0.04). The HD session induces a decrease of TAS, which seems to be influenced by the type of the dialysis membrane. The nutritional status, age and iron status of these patients seem to play an important role.

The effect of HCV infection on insulin resistance in chronic hemodialysis patients

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OP

The purpose: To investigate the effect of HCV infection on insulin resistance (IR) in chronic hemodialysis patients. Methods: The study has been performed with a total of 55 patients having regular hemodialysis treatment. 34 of them (20 fameles and 14 males with ages between 17 and 72) were HCV (+); and the other 21 patients (8 females and 11 males with ages between 17 and 80) werenegative for HCV and other viral markers. Non of the patients had a disease or drug that is known to cause insulin resistance. BMI of patients was below 27. This group was matched with a healthy control group. IR was determined with the formula of Homeostasis Modal Assesment (HOMA-IR). Findings: IR rates were 82,35 % and 54,54% in HCV (+) and HCV (-) groups respectively (p<0,05). Insulin levels of HCV (+) patients were significantly higher than HCV (-) group (p=0,039) and the control group (p=0,021). C-peptide levels of both HCV (+) and (-) groups were significantly higher than the control group (p<0,001). A meaningful positive corrrelation of log.HOMA with insulin (r=0,938, p=0,000) and glucose (r=0,388, p=0,015) has been found in all HOMA IR (+) patients. Result: In chronic hemodialysis patients; HCV infection is related with IR, insulin and glucose, independent from other factors.

Native arteriovenous fistula in hemodialysis patients: the impact of clinical, nutritional, inflammatory, atherosclerotic and genetic factors on prognosis

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PP

Introduction: Function of arteriovenous fistula (AVF) is an important factor on quality of hemodialysis (HD). Procedures on vascular access and their subsequent complications are predictor of morbidity and mortality. Patients and Methods: One hundred and eighteen patients (48F, 70M, mean age: 49±30 years) included. Mean number of AVF procedure was 2.3±1.6 per patient and the mean AVF survival was 42±44 months and associations with age, body mass index (BMI), ambulatory blood pressure monitorization data, carotid artery intima media thickness (CIMT), smoking (n=32, 27%), diabetes (n=24, 20%), type of anticoagulation (LMWH user n=32, 27%) serum levels of homocysteine, albumin, CRP, prealbumin, lipids, apolipoproteins were evaluated by multivariate regression analysis. IL-10 (-1082, -819, -592), TNF-alpha (308,-238) and TGF-beta (-10,-25) gene polymorphism were detected by PCR-SSP method and compared by ANOVA. Results: AVF survival was negatively correlated with lipoprotein(a), total cholesterol, LDL, pulse pressure ,CIMT, BMI and positively correlated with ferritin level (p<0.05). Influence of genetic polymorphism in IL-10 promotor 819 and 592 gene were found on mean AVF survival (for –819; CC: 33 ± 36, CT: 61±53 and TT: 80±64 months, and for –592; CC: 31±26, CA: 50±47 and AA: 24±17 months, p<0.05). There were not a significant association of smoking, diabetes and type of heparin used on AVF. Discussion: This study showed that, CIMT,BMI, pulse pressure, lipid profile and genetic polymorhism of IL-10 gene seem to be associated with AVF survival. To achive an optimal outcome with AVF, patients and physician should eliminate the factors that negatively affecting AVF survival.

Acute renal failure caused by spontaneous tumor lysis syndrome due to solid pancreas tumor

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PP

Tumor lysis syndrome (TLS) is generally associated with chemotherapy of hematological malignancies and rarely with solid tumors. However, only few case reports regarding spontaneous TLS, caused by solid tumors, are available. This is the first case of a spontaneous TLS caused by solid pancreas tumor. 56-year-old male was admited to hospital because of chest pain, mild peripheral oedema, ascites and normal urine output. Mean blood pressure ranged between 65-70 mmHg. At the first, serum urea was 10.7 mmol/l, creatinine 0.115 mmol/l, uric acid 0.79 mmol/l, K 4,5 mEq/L, P 1.29 mmol/l, Ca 2.9 mmol/l, lactate dehydrogenase (LDH) 1495 U/l and hematocrit 49%. P and uric acid then gradually increased. Thomography revealed 10x10 cm sized tumor on pancreas, peritoneal carcinomatosis and ascites. Ascites was hemorrhagic, but the cytologyc investigations failed to give any results. Cultures from blood and ascites yielded no bacteria. Because of massive and intractable ascites tumor biopsy couldn't be performed. No other malignancies were found. Rapidly increasing ascites prevented proper hydration. Parasynthesis was useless

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because of intrabdominal adhesions. Allopurinol (600 mg/day) and haemodialysis (HD) did not prevent the increase of uric acid, P and the subsequent ARF. Because of intractable ascites and noncurable (even with daily HD) severe acidemia the patient died on 42nd day of his admition. In conclusion, this TLS was caused by a solid pancreas tumor, with peritonitis carcinomatosa, which was never seen before. If the effective circulating blood volume is decreased, even allopurinol together with daily HD may not prevent uric acid increase and the renal failure.

Timely transfer of peritoneal dialysis patients to hemodialysis improves survival rates

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PP

The two main renal replacement therapies (RRT) - hemodialysis (HD) and continuous ambulatory peritoneal dialysis (PD) - have been considered to be antagonistic in most published studies on the clinical outcomes of dialysis patients. Recently it has been suggested that the complementary use of both modalities as an integrated-care (IC) strategy might improve the survival rate of end-stage renal disease patients. The aim of this study was to estimate the final clinical outcome of PD patients when they transfer to HD because of complications related to PD. We retrospectively analyzed data from the following patients that started RRT during the period 1990-2000: 33 PD patients (IC group; age 55±15 y, mean±SD) who transferred to HD, 134 PD patients (PD group, age 64±11 y) who remained in PD, and 132 HD patients (HD group, age 48±16 y) who started and continued in HD. The main reasons for the transfer to HD were relapsed peritonitis and loss of ultrafiltration, while various comorbid risk factors were adjusted by Cox hazards regression model (age, presence of diabetes or/and cardiovascular disease, serum hemoglobin and albumin levels, as well as the modality per se). Three - and five-year survival rates for the IC, PD, and HD groups were 97% and 81%, 54% and 28%, and 92%, and 83%, respectively. The 5-year survival rate was significantly higher in IC patients than in PD patients ($p<0.00001$) but, was not different from than in HD patients.

Our results show that the IC of dialysis patients undergoing RRT improves the survival of patients on PD if they are transferred to HD, upon the appearance of PD related complications.

Vascular access surveillance and monitoring by using an ultrasound dilution technique

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PP

Vascular access thrombosis is a major problem in hemodialysis units, resulting in increased patient morbidity, hospitalization and overall dialysis cost. Salvaging a malfunctioning access prior to thrombosis minimizes the necessity of central catheter insertion and spares vessels for future access creation. We describe our experience from a vascular access surveillance practice, including periodic measurement of the access blood flow, using ultrasound dilution technique (Transonic®) for grafts and physical examination for native fistulae followed by recirculation and flow measurements when necessary. Fifteen grafts have been followed: the mean flow of the initial measurement was 945 ml/min (range: 650-2150ml/min). Three grafts had declining flow through time and were thrombosed prior to intervention at a mean flow of 520 m/min after a mean functioning time of 11 months. One graft with declining flow (from 820 to180 ml/min) was surgically revised, while still functioning: the venous graft anastomosis was found stenosed and reconstructed; thereafter flow increased to above 500 ml/min and the access has been functioning for 25 months. One more graft, with functioning time of 18 months, has declining flow (from 1470 to 800 ml/min). Five grafts have stable flows (mean value 780 ml/min) with 35 months mean functioning time. Five more are recently implanted grafts without enough follow-up time. Six native fistulae having clinical signs of stenosis disclosed significant recirculation when tested with Transonic. Surgical revision confirmed the stenosis' and repair was made either by creation of a new anastomosis or by interposing a small graft. In conclusion vascular access flow measurement using ultrasound dilution technique is a useful tool for predicting thrombosis, especially concerning grafts, dictating timely intervention with either angioplasty or surgical revision in order to extend the "lifespan" of the vascular access.

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Fibrinogen: still one cardiovascular risk factor for patients on peritoneal dialysis

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PP

Peritoneal dialysis (PD) could be considered as a process of continuous inflammation of the peritoneum, due to dialysate synthesis. Furthermore, the abnormal lipid profile of these patients is an additional risk factor for cardiovascular disease (CVD). On the other hand, elevated levels of fibrinogen have consistenly been shown to be an independent predictor of initial and reccurent cardiovascular events. The purpose of our study was to define fibrinogen levels and to examine possible correlations with other factors rellated to inflammation and CVD in PD patients. We investigated 71 patients (24F, 47M) with a mean age of 64.6+-12 years (33-89) and a mean duration on PD of 37.5+-9 months (3-101). We also investigated 47 individuals (18F, 29M) with a mean age of 58.7+-9 years (37-76), thereafter referred to as "control group". No patient was on hypolipidemic agents or had any clinacal evidence of inflammation during the last two months. Fibrinogen concentration was based on Class method (normal values: 230-280 mg/dl). Mean fibrinogen levels were 577.4+-90 mg/dl (90-830) and differ statistically from the control group (263.6+-38 mg/dl), $p<0.001$. Only 2 pateints (2.8%) had normal values. Fibrinogen was positively related to LDL-cholesterol ($r=0.396$, $p<0.05$), serum albumin ($r=0.532$, $p<0.05$), PTH ($r=0.437$, $p<0.05$) and CRP($r=0.472$, $p<0.05$). Patients with CVD had greater fibrinogen levels than those without (672.2+-101 Vs 485.6+-77 mg/dl), $p<0.05$. There were no differences according to sex, age, diabetes, duration on PD, Hb, triglycerides, HDL-cholesterol and Lp(a). Patients with CVD had greater CRP levels than those without (2.7+-0.9 Vs 1.9+-0.7 mg/dl), $p<0.05$. In conclusion, this study suggests that patients on PD have raised fibrinogen levels. Positive correlation of fibrinogen- CRP raises the inflammatory status of these patients, while the positive correlation between fibrinogem-dyslipidemia-CVD raises further more the risk for cardiovascular events. Presumably the routine use of fibrinogen could be regarded as a useful and simple cardiovascular risk marker.

C-reactive protein: a simple and useful cardiovascular risk factor for patients on peritoneal dialysis

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PP

C- reactive protein (CRP) is an acute phase protein. It accompanies both acute and chronic inflammatory states. It's considered as an independent risk factor for onset and progression of atherosclerosis. It's also known that, PD could be regarded as a process of continuous inflammation of the peritoneum, due to dialysate synthesis. The abnormal lipid profile of these patients is an additional risk factor for atherosclerosis. The purpose of our study was to define CRP levels and to look for possible correlation with other factors related to inflammation and atherosclerosis. We investigated 43 patients (23 M, 20F) of mean age of 65.3+-13 years (33-85) and mean duration on PD of 42.6+-9 months (6-100). We also investigated 30 individuals (16M, 14F) with a mean age of 57.3+-10 years (27-72), thereafter referred to as "control group". CRP determination was based on a high-sensitivity immunonephelometry (normal values:0-0.5 mg/dl). No patient had any clinical evidence of inflammation during the last two months. Mean CRP levels were increased to 2.3+-0.9 mg/dl (0.35-7.9) and differ statistically from the control group [0.32+-0.09 mg/dl (0-1.7)], $p<0.001$. Only 7 patients (16%)had normal values, while 29 (67.4%) had levels more than 1 mg/dl, indicative of inflammation. CRP was positively related to ESR ($r=0.787$, $p<0.001$) and Lp(a) ($r=0.581$, $p<0.05$). Patients with CVD had greater levels than those without (2.7+-0.9 Vs 1.9+-0.7 mg/dl, $p<0.05$). There were no differences regarding sex, diabetic status, duration of PD, age, PTH, albumin, Hb and fibrinogen levels. In conclusion, this study suggests that: patients on PD have raised CRP levels. The postive correlation between CRP and Lp(a), ESR and CVD appears to be quite interresting and demands further evaluation. Those increased levels of CRP could be considered as a useful risk factor for CVD, in those patients that already are on raised cardiovascular jeopardy.

Recommended doses of long-term IV iron supplementation in erythropoetin treated hemodialysis patients lead to iron overload

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PP

Erythropoietin (E) treatment in dialyzed patients (pts) is efficient only under chronic IV administration of iron (I) in high doses. We studied I accumulation in 26 pts: 18 M/8 F, age 62.5 years (39-81), on hemodialysis since 93 months (9-232). They were on E and I supplementation during 1991-2001 and had a median follow-up of 72 months (12-132). We analyzed mean per year Ht, Hb, ferritine (F), total quantity of administered I (TI), mean monthly I (MI) and weekly dose of E (WE). Ht increased: 31±1.9% to 34.6±2.6%, P<0.006, Hb: 9.9±0.6 to 11.3±0.9 g/dl, P<0.003. WE dose remained similar throughout the study. TI was 7.8g (1.4-21), MI 125 mg (35.6-250). F gradually increased: 246.5±126 to 492.4±422.3 ng/ml. Results in 11 pts receiving low MI: 71.7±17.9 mg were similar to those of the other 15 with higher MI doses: 163.6±40.9mg. A subgroup of 11/26 pts with a 96 months follow-up under I treatment, presented the largest rise of F (246.5±126 to 670.2±567.2 ng/ml, P<0.04). Another subgroup of 11 pts, transfused with a median of 2 (1-7) blood units in addition to E, received larger TI: 10.7±4.7/6.8±4.4 g, P<0.04, but similar MI and showed F higher than the rest of the group pts (1994:314±129.4/165.4±60.8 ng/ml, P<0.05, 2001:621.4±278.5/372.4 ±257.9 ng/ml, P< 0.05). Long-term IV iron administration in recommended high doses promotes EPO response. Despite that, with time, the risk of iron accumulation increases, even with individualized and lower than recommended monthly iron doses.

Prophylactic induction and maintenance therapy with mycophenolate mofetil

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PP

Mycophenolate Mofetil (MMF)is an immunosuppressive agent which blocks the de-novo synthesis of guanine nucleotides. Blocking effect on cell division is lymphocyte-selective with little effect on the division of other cell types. The goal of the study is to show efficacy of MMF as part of the prophylactic induction and maintenance immunosuppressive therapy after renal transplantation, and MMF as riscue therapy for refractory rejection, and effect of MMF in chronic rejection. The study includes sixty renal transplants with mean age 41+/-6 years, 26 male and 34 female. Their immunosuppressive therapy includes MMF in combination with corticosteroids (CS), Cyclosporin A (CyA), Tacrolimus, and Sirolimus. MMF was administered according to different indication: by induction in 18 patients, secondary (substitution of Azathioprine (Aza) - in 36 patients, and in case of nephrotoxic effect of CyA - 6 patients. The term of observation was from 6 to 24 months. We established significant decrease of proteinuria (p<0.05) and significant (p<0.05) impruvement (increase of creatinine clearance and decrease of creatinine) in patients with CyA resistant rejection. In patients with advanced chronic rejection and/or hepatic lesion MMF was the unique alternative for Aza and CyA. We did not establish acute rejection in patients with primary induction by MMF in first six years after transplantation. MMF proved superior to Aza as a postransplat immunosuppressant in conjunction with CyA and CS. MMF-treated group showed reduction of incidence and severity of rejection episodes. MMF is an effective immunosuppressant following renal transplantation.

The effect of pregnancy on cyclosporine levels in renal allograft patients

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PP

The pregnancy is normal in renal transplant women with normal renal function. Our objective is to assess the effect of pregnancy on cyclosporine levels in eight renal allograft patients. We used following methods: maternal demographic, laboratory, clinical, and perinatal outcome data were recorded in eight pregnant women with previous renal allografts receiving cyclosporine immunosuppression. The cyclosporine and serum creatinine levels were measured before pregnancy, during each trimester, and postpartum. Results: The mean maternal age was 25.5 (+/-3.5) years. Parity ranged from 0 to 3. mean serum creatinine levels tended to be lower during pregnancy than bofore or after, as did the mean cyclosporine levels. After adjusting for dose, seven of eight patients had declines in cyclosporine level during pregnancy. The mean gestational age at delivery was 37.5 (+/-2.5) weeks with a mean birth weight of 2940 (+/-520) g. Conclusion: Pregnancy in patients with renal allografts can lead to a substantial decline in cyclosporine levels.

Mycoplasmas as urinary tract infections' etiologic agents in renal transplants

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PP

The two genital mycoplasmas are Ureoplasma urealyticum and Mycoplasma hominis which may play a pathogenetic role in urinary tract infections. Both have been associated more with genital infection than with UTI, but U. urealyticum does cause a significant number of cases of urethritis and both have been implicated as causes of chronic pyelonephritis. Perhaps the best argument that these organisms may play a role in upper UTI is the report of the association of U. urealyticum with renal stones. We examined 39 renal transplant patients - 29 women and 12 men with mean age

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38.6 years (range from 18 to 61). 31 patients had symptoms associated with chronic pyelonephritis - dysuria (burning or discomfort on urination), frequency, nocturia, and suprapubic discomfort. Approximately 81% (@% patients) was women in reproductive age - from 25 to 35 yers. We established UTI with Mycoplasma hominis in 34 patients (87%), Mycoplasma fermentas - in 3 patients (8%), and Ureoplasma urealyticum - in 2 patients (5%). M. hominis is more frequently pathogen of UTI of this group microorganisms. We know M. fermentas is less cconected with UTI because it is saprofite microorganism. Mycoplasmas are rare etiologic agents in UTI but they have an important and a significant role and difficult treatment.

Immunosuppression and anemia in renal transplant patients

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PP

Renal transplantation is optimal method for treatment in end-stage renal disease. There are meny specific problems after renal transplantation. Factors affecting long-term outcome after transplantation include persistent anemia. The goal of the study is to show the influence of immunosuppression on hemoglobin levels. We established 310 renal transplants with mean age 44.5 (range 8-71) years. The most commonly used immunosuppressive agents were corticosteroids (88.5%) and cyclosporine (76.5%), followed by azathioprine (56%), mycophenolate mofetil (MMF, 36.5%), sirolimus (3%), and tacrolimus (1%).In analyses of the effect of combinations of immunosuppressive drugs, only patients with a normal serum creatinine were included, in order to exclude renal function as a confounding factor. Among these patients, the most common drug combinations used and the associated mean hemoglobin (Hb) concentration were: MMF/cyclosporin/steroids (132 g/l), cyclosporin/Aza/steroids (131 g/l), cyclosporin/steroids (136 g/l), MMF/steroids (128 g/l). Thus, patients treated with cyclosporine/steroids had the highest mean hemoglobin and patients treated with MMF/steroids the lowest. Overall, significantly lower Hb levels were observed for immunosuppresive regimes including either MMF (Hb-130.5 +/-1.5 g/l versus 134.5 +/-1.5 g/l for regime without MMF; $p<0.05$). In fact, the incidence of anemia was significantly higher in MMF treated patients (8% versus 4% for regime without MMF; $p<0.05$). We established in patients with a good functioning renal graft, immunosuppressive therapy including either MMF or Aza may reduce hemoglobin levels, and may influence anemia status.

Renal transplantation and obesity

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PP

Obesity represents a risk factor in patients after renal transplantation. It is characterized by the abdominal (visceral)type of obesity in men and women alike. The prevalence is high, randing between 25% and 35% in the first post-transplant year. Obesity is associated with other risk factors, primarily hypertrigliceridemia, increased incidence of diabetes mellitus, cardiovascular complications, and chronic allograft nephropathy.The goal of the study is to show the frequency of obesity in renal transplant patients. 310 renal transplant patients were examined. We used following parameters: body weight, height, body mass index, triglicerides, total cholesterol. All patients were on cyclosporin A, mycophenolate mofetil or azathioprin, and corticosteroids. There are a group (8pts) without corticosteroids.We established a frequency of obesity in the first post-transplant year 24%. All patients increase body wieght after transplantation compared with body wieght before transplantation ($p<0.001$). This is resulted of improved renal function and total clinical status. We established also hypertrigliceridemia and hypercholesterolemia in 20%. Both hypertrigliceridemia and hypercholesterolemia showed a high correlation with increased body weight ($r=0.54$; $r=0.57$). In five years after transplantation frequency of increased body weight is 21%. Less frequency correlates with decreased dose of corticosteroids, improved life, and better diet. In patients without corticosteroids we established decrease of body weight ($p<0.05$) in one year after stop of corticosteroids. This study hahe demonstrated that obese renal transplant patients did not differ from Bulgaria population. Based on this results can assume that obesity, hypertrigliceridemia, and hypercholesterolemia can be effectively treated by long-term diet, modified immunosuppression, and drug-treatment.

Lamivudine in renal transplanted patients with active hepatitis B

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PP

Treatment with Lamivudine /Zeffix/ was performed in 20 patients with kidney transplantation - HbsAg carrier and sighs of viral replication (HbeAg, PCR) and hepatocytolysis /elevated ASAT, ALAT, GGTP/. Liver biopsy was not performed. After 6-24 months of treatment with Zeffix in dosis - 100 mg/d, we can check positive results conserning viral replication and hepatocytolysis. There was no changes in Hbs Ag/+/ status.

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Superior vena cava syndrome as long-term complication of internal jugular vein cannulation in HD patients

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PP

Central vein catheters (CVCs), though criticized for short- and long-term complications, gained a well-recognized usefulness through years as a temporary access for hemodialysis. Cuffed CVCs have been increasingly used as permanent access in HD patients, who have exhausted all other access options. Internal jugular vein (IJV) cannulation was reported to minimize long-term complications, particularly vein thrombosis or stenosis, compared to subclavian cannulation. We describe two cases of superior vena cava syndrome (SVCS), which developed after IJV cathetirization. Seventy four CVCs have been inserted, 57 in the IJV and 17 in the subclavian vein, of 56 HD patients, during the last 5 years in our unit. 64 temporary catheters were removed after a mean time of 3.9 months, while 10 tunneled cuffed catheters have been used as permanent HD access, for a mean duration of 17.1 months. CASE 1: A 77 year old female patient was diagnosed with end-stage renal disease (ESRD), requiring dialysis. A tunneled cuffed double lumen catheter was easily inserted in her right IJV, which was cannulated never before. Catheter operation was uncomplicated and the patient remained asymptomatic for the following six months. Diminished catheter blood flow was detected thereafter, followed by edema of the face, neck, upper trunk and both arms. Triplex ultrasound and CT scan disclosed extended thrombosis of the SVC. CASE 2: A 72 year old male patient was diagnosed with ESRD, requiring dialysis. The latter was performed through a temporary double lumen catheter, inserted in the right IJV, which was also cannulated never before. The catheter was removed 5 months after initial placement. Five months later, signs of SVCS developed and an extended SVC thrombosis was diagnosed by triplex ultrasound and CT scan. SVCS may be a long-term complication of right IJV cannulation with either temporary or permanent tunnel cuffed catheter.

Arterial hypertension frequency in urban and rural population of children during the period of ten years observation

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PP

Basic aim of this investigation was to determine the frequency and the form of the arterial hypertension in children between 7 and 16 years old in urban and rural population, and particular aims where as follows: to determine by screening method, i.e., by ellmination, the arterial hypertension prevalence in relation to the permanent address (town-village), age and sex of children, to determine, by the same method, the prevalence of the individual forms of essential and borderline arterial hypertension, to test the factors of risk in the patients with essential and borderline arterial hypertension: obesity, hereditary predisposition (relatives of first and second order) and lipid. The examination included 3000 children (age 7- 16 years) during regular school days. Essential hypertension in this study was defined as blood pressure permanently greater than 95 th percentile for age and sex on at least three distinguished measurements, secondary causes of hypertension were excluded by the available clinical, laboratory and functional investigation. Borderline hypertension was defined as blood pressure permanently greater than 90 th percentile, and from time to time, greater than 95 th percentile for age and sex on at least three distinguished measurements, when the secondary causes of hypertension where excluded. The investigation results made possible for us to draw the following conclusions: prevalence of arterial hypertension for all children was 0,93 %, and it was the lowest in children aged 7-15 years (0,83 %), and the highest in children aged 15-16 years (2,96 %). Prevalence of essential hypertension was 0,37 %, and borderline arterial hypertension 0,56 %. Prevalence of arterial hypertension was greater in urban than in rural population of children (1,09: 0,55 %), but without statistically significant difference ($p > 0,05$). By means of the clinical- laboratory testing, the presence of inherent factors was found in60,7 %, of obesity 45,4 % and hyperlipidemy in 4 children with essential hypertension. In all children with arterial hypertension 24 hours Holter monitoring were done. Patients with essential hypertension had tachycardia in 95 % and patients with borderline hypertension in 65 %.

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Dermatomyositis associated with renal failure

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PP

Dermatomyositis is a systemic connective tissue disease, characterized by inflammatory and degenerative changes in the muscles and in the skin. Relatively rare visceral organs are involved. Dermatomyositis associated with renal failure (also in rare cases) can occure because of severe rhabdomyolysis with myoglobinuria. We have noted 3 cases with dermatomyositis associated with renal failure at our Department for the period of 3 months. The age of the patients: 22,61,64 year. The enzyme level of creatinin kinase was elevated in 2 patients, the third patient presented only elevation of alkaline phosphatase. Creatinin clearence was decreased in all 3 cases (19,20...33,86ml/min). Mixed proteinuria was also noted in all 3 cases (0,2...0,27 g/24h). Skin and muscle biopsy was performed: Myocytes presented atrophy,intracytoplasmatic vacuoles and mononuclear cellinfiltration surrounding necrotic parts. Sequential demyelinisation was noted in one patient. The patients were treated with steroids,cyclophosphamide and in one case we performed plasmapheresis. Enzyme levels have returned to normal values and the patients condition was recovered after the treatment.

Using ambulatory blood pressure monitoring to identify white coat hypertension in children

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PP

White-coat hypertension (WCH) is usually defined as an elevated clinic blood pressure in the presence of a normal daytime ambulatory blood pressure. Diagnosis of WCH is the main clinical indication for ambulatory blood pressure monitoring (ABPM). The objective of this study was to investigate the use of ambulatory blood pressure monitoring in the assessment of WCH in children. 24-hour ABPM was performed in 30 normotensive (auscultatory casual blood pressure was obtained before ABPM) subjects, aged from 4 to 6 years (19 males, age 5.1+/-0.6 years; 11 females, age 5.0+/-0.7 years; mean+/-SD) with body heights between 100 and 120 cm. ABPM was carried out on non-dominant arm using an oscillometric device (SpaceLab 90207) with appropriate cuff size. Statistical analysis of the data was done with SPSS package. In subjects of both sexes the 24-hour mean systolic/diastolic blood pressure (SBP/DBP) were lower than the mean pre-ABPM SBP/DBP. Both daytime and nighttime mean SBP/DBP for boys and girls were lower than the mean pre-ABPM SBP/DBP. These results suggest that "white coat" effect apparently exists in children: clinic blood pressure was higher than daytime ABPM. ABPM enables identification of patients whose blood pressure is elevated in the office but normal at home. The accurate diagnosis of white coat hypertension may avoid unnecessary diagnostic evaluation and treatment in these children.

Our first experience with lanthanum carbonate

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PP

Hyperphosphataemia maintains prevalent among dialysis patients and presents significant factor for development of both secondary hyperparathyroidism and cardiovascular morbidity and mortality. Phosphate binders (PB) are irreplaceable in the treatment of hyperphosphatemia but neither one of them reached the criteria for ideal PB. Lanthanum carbonate (LC) (Fosrenol) is a novel PB. In the phase III, open-label study comparing the effects of LC and calcium carbonate (CC) on the evolution of renal osteodystrophy (ROD) in dialysis patients nine our patients were included. Four of them were treated with LC and the remaining with CC. During one-year study LC was well tolerated and only slight gastrointestinal symptoms appeared. Serum phosphate levels were well controlled with 500-2000 mg of LC but 1000-4500 mg of CC. Hypercalcemia was registered 5 times in three patient treated with LC but 10 times in 4 patients treated with CC. No significant difference was found in serum alkaline phosphatase and PTH levels between groups. Bone biopsy performed at the outset and at the end of the study revealed in LC group that both hyperparathyroidism and low-turnover ROD changed toward the normalization of histology. After the end of one-year study all patients had to be treated with CC as only available PB in our country. Patients from LC group needed 500- 3000 mg of CC. Hypercalcemia appeared in 2 of them and in 3 of patients from CC group. Therefore, CC dosage had to be decreased that resulted in hyperphosphatemia. In conclusion, our first experience showed that LC is well tolerated and efficient PB, which enables satisfied phosphate levels control and escaping of hypercalcemia.

Impaired insulin sensitivity and insulin secretion in hemodialysis patients with and without secondary hyperparathyroidism

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OP

The aim of our study was to investigate insulin sensitivity and beta cell function in hemodialysis (HD) patients without diabetes. We hypothesized that parathyroid glands function

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was a determinant of insulin sensitivity and/or beta cell function. The study was randomized, cross-sectional and patients were divided into two groups (total 27 patients), with relative hypoparathyroidism (iPTH<200 pg/ml) – 9 (33.3%)[Gr1] and hyperparathyroidism (iPTH≥200 pg/ml) - 18 (66.6%)[Gr2]. Control group consisted of 45 healthy subjects. Insulin resistance and insulin secretion were calculated from fasting serum insulin and glucose concentration by Homeostatic Model Assessment score (HOMA IR and HOMA BETA). The value of HOMA IR (3.3±1.3 for Gr1, 4.8±2.4 for Gr2, 1.7±0.8 for Gr3) as well as glucose level (5.0±1.0mmol/l in Gr1, 5.2±0.8mmol/l in Gr2, 4.6±0.4mmol/l in Gr3) was significantly higher in HD patients then in control subjects. Excessive secretion in HD patients (assessed by HOMA BETA) was significantly higher in Gr2 only (p=0.02). HOMA IR was higher in Gr2 then in Gr1 (p=0.05). Positive correlation between HOMA IR and serum iPTH was seen in Gr2 only (r=0.565, p=0.02). HOMA BETA inversely correlated with Ca x iP product in Gr1 (r= -0.689, p=0.04). Serum iPTH correlated positively with serum Ca2+ (r= 0.489, p=0.03) and enlarged parathyroid glands volume (r= 0.556, p= 0.04) in Gr2. In conclusion, our study demonstrated, by HOMA IR score, the presence of higher level of serum insulin and insulin resistance in HD patients. Serum iPTH directly correlated with insulin resistance index in hyperparathyroid patients what suggested possible interaction between iPTH and insulin signaling pathway. A significantly excessive insulin secretion was registered only in hyperparathyroid HD patients. Also, we demonstrated preserved beta cells function in both groups of our patients, which could imply relatively good sensitivity of CaR in beta cells.

Nutritional status in hemodialysis patients: a retrospective study

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PP

Background. Alow plasma albumin, urea, creatinine level and low value of normalized protein cataboilic rate (nPCR) are a risk factors for mortality in hemodialysis patients (pts). Nutritional status was assessed by subjective global assessment (SGA). Aim of the study was to identify pts at risk of malnutrition and hence increased mortality. Methods. We examined 62 haemodialysis patients monitored at baseline and regular check-ups every 6 months. The following parameters were obtained at baseline and reviewed every 6 months within 2 years: plasma albumin level, plasma urea and creatinine level, plasma lipids level (cholesterol, triglyceride, HDL-cholesterol, apo A1, apo B, normalized protein catabolic rate (nPCR), adequacy of dialysis (Kt/V), body mass index (BMI), midarm circumference (MAMC), length of time on haemodialysis (HD). Results. At the end of follow up period, 20 (32.26%) of all pts had died, 17(27.42%) of them from cardiovascular disease (CVD). Multivariate Cox survival analysis revealed that baseline plasma creatinine level was associated with an increased all-cause mortality risk of 0.995 *95% confidence interval (CI) 0.992 to 0.998, p<0.01), and a cardiovascular mortality risk of 0.996 (CI 0.010 to 0.526, p<0.01). Low value of nPCR was associated with an increased all-cause mortality risk of 0.061 *CI 0.009 to 0.410, p<0.01), and a cardiovascular mortality risk of 0.073 (CI 0.010 to 0.526, p<0.01). Conclusion. A simple protocol can identify pts at risk of malnutrition. Plasma creatinine level and nPCR value are significant predictors of mortality.

The influence of proteinuria in deterioration of metabolism apoproteins

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PP

The study included 60 patients (M:F 22:26), mean age 37,15±9,85 years, with average GFR 86,27±19,81 mL/min, and average BMI 24,18±2,23 Kg/m2. Regarding the level of glomerular proteinuria patients were divided into four groups. The first group, with proteinuria levels less than 0,25 g/24h, included 15 patients (M:F 6:9) (control group), with mean Apo A-I 1,59±0,18 g/L, Apo B 0,94±0,18 g/L, and Apo E 48,47±9,07 g/L. The second group, with proteinuria between 0,25 and 1,0 g/24h, comprised 15 patients (M:F 9:6) with PGN, with mean Apo A-I 1,75±0,31 g/L, Apo B 1,10±0,20 g/L, and Apo E 58,02±25,07 g/L. The third group consisted of 15 patients (M:F 8:7) with PGN, with proteinuria between 1,0 and 3,0 g/24h, and mean Apo A-I 1,75±0,27 g/L, Apo B 1,16±0,29 g/L, and Apo E 54,67±20,58 g/L. The fourth group, with proteinuria higher than 3,0 g/24h, included 15 patients (M:F 9:6) with PGN, with mean Apo A-I 1,87±0,57 g/L, Apo B 1,69±0,32 g/L, and Apo E 80,41±28,76 g/L. Results were statistically analyzed using Student t test. Statistically, patients with proteinuria over 3,0 g/24h have significantly higher Apo B and Apo E valves in the serum, as well as apo B/apo A-I compared to control group of the test subjects, and the groups of patients with proteinuria around 0,25-1,0 g/24h and proteinuria around 1,0-3,0 g/24h. Proteinuria leads to deterioration of apoproteins abnormalities.

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Evaluation and outcomes of diabetic care of hemodialysis patients

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PP

Aim: The aim of the study was to evaluate the outcomes of diabetic care of hemodialysis patients. Methods: We have made a retrospective study at Clinic of Nephrology-Skopje in period January-December 2002. We have analysed a total number of 45 diabetic patients (male 20, female 25), mean age 62,1±11,6 year. Four patients had Diabetes Mellitus (DM) type 1, twenty-three had DM type 2 and eighteen patients had DM type 2 on insulin therapy. We have evaluated medications, blood pressure, eye exam and laboratory findings. Results: The average hemodialysis (HD) duration was 1,8±1,8 years and time difference between the beginning of DM and HD was 10,1±6,4 years. Most of the patients (n=22) were on insulin therapy with two shots (NPH insulin and mixed biphasic insulin), while 20 patients used oral antihyperglycemic drugs. All patients were overweight (BMI=26,9±4,6 kg/m2). Twenty-six patients (58%) were hypertensive (mean blood pressure 159/92 mmHg). On eye exam, 25 patients had non-proliferative diabetic retinopathy (DR), 6 patients had proliferative DR, and laser photocoagulation was performed on 5 patients. The fasting glycemia was 7.4±3.0 mmol/L and HbA1C 7.6±0.9%. The albumin level was 34.6±5.8 g/L and cholesterol level was 5.9±2.1 mmol/L. Conclusion: Although hemodialysis patients with diabetes appear to receive timely care, patient outcomes often are poor. Medication use is suboptimal (high percent patients with hypertension and DR, increased BMI and cholesterol). There is a need of interventions to improve outcomes of hemodialysis patients with diabetes.

The incidence of biopsy proven primary glomerulonephritis at the deparment of nephrology, clinical centre, Skopje

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OP

Background: Glomerulonephritis (GN) is one of the commonest causes of end-stage renal failure in underdeveloped countries. Methods: This is a single center retrospective study. Renal biopsy specimens of adult patients with primary GN were selected from 1,304 percutaneous renal biopsies, performed with Tru-cut needle at the Department of Nephrology, Skopje, R. Macedonia, over a period of 26 years (1975-2001). All the biopsies were evaluated by light microscopy and immunofluorescence, using standard procedures. A minority were assessed by electron microscopy that was available during the following periods: 1980-83 and 1993-98. The criteria for classifying glomerular lesions as primary were based on the lack of evidence of systemic diseases or underlying abnormality. Churg (WHO) classification was performed for further classification of separated primary forms of GN. Results: The diagnosis of primary glomerular disease was confirmed in 716 patients with the incidence as follows: minimal change nephritic syndrome in 52 (7.2%), focal segmental glomerulosclerosis in 72 (9,9%), membranous nephropathy in 97 (13.5%), membranoproliferative glomerulonephritis in 59 (8.4%), acute in 88 (12.3%), crescentic in 53 (7.4%) and sclerosing glomerulonephritis in 46 (6.4%). Conclusions: The most frequent histological forms in this study were membranous nephropathy (13.5%) and focal mesangial GN (13.5%). The high incidence of membranous nephropathy may be associated with high prevalence of HbS antigen among the population of R. Macedonia. IgA nephropathy is high, as in the studies of other Mediterranean countries (Italy, Spain, Greece, France) as well as studies from countries located on the same geographical latitude (Korea, Japan).

Evaluation of diabetic patients on maintenance hemodialysis: single center experience

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OP

Background: Towards the end of the millennium the appearance of chronic renal failure (CRF) cases of diabetes mellitus (DM) type 2 became more frequent, so that certain scientists called it "a medical catastrophe of the worldwide dimensions". Mortality among diabetics is 1.5 to 2.5 greater than non-diabetics, so that fewer than 20% of patients with DM and terminal CRF survive for more than 5 years on hemodialylis (HD). However, little is known about the diabetic care of hemodialysis patients. Aim: To evaluate diabetic patients on maintenance HD. Materials and methods: We evaluated 31 diabetic patients (15.4%), from total number of 201 patients on maintenance HD at the Department of Nephrology – Skopje. We found 5 patients with DM type 1, 26 patients with type 2 DM, with average 59.2±10.5 years old. Males were 16 and females were 15. Duration of DM was 17.3±12.9 years. Results: Diabetic nephropathy (DN) had 19 patients with its duration of 5.7±4.1 years. Hypertension was found in 85.7%. Familial history of DM was positive in 43.3%, and of hypertension in 30.1%. Smokers were 12.9% and alcohol consumers were 3.2%. We found the following laboratory findings during HD: fasting glycemia: 10,5±5.6 mmol/L; BUN: 26.4±5.6 mmol/L; serum creatinine: 639.4±28.5 mmol/L; serum cholesterol: 4.8±1.35 mmol/L; serum tryglicerides: 2.8±1.8 mmol/L. Macrovascu-

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lar diabetic complication before HD was less than 35%, with increasing during the HD treatment more than 50%. Diabetic patients had poorest survival rate. Conclusion: We can conclude that the number of diabetic patients on maintenance HD is increasing. There is no team approach in initial detection of renal dysfunction in these patients and no early diagnosis of DN. There is a need of early detection, treatment of diabetic patients and especially with renal dysfunction and team approach between diabetologist-nephrologist-cardiologist-ophtalmologist and neurologist. The end point is better medical care, as well as a better quality of life.

The role of helicobacter pylori infection for the upper gastrointestinal dyspepsia in hemodialysis patients

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PP

The purpose of our study was to investigate the frequency and severity of upper gastointestinal dyspepsia in patients with end stage renal failure on hemodialysis and the role of Helicobacter pylori infection.
We prospectively studied 256 persons: 102 patients on hemodialysis; 55 of them HP positive/53,92%/, 100 consequtive dyspeptic outpatients diagnosed in endoscopic section; 80 of them HP positive/80%/ and 54 healthy volunteers; 36 of them HP positive/66, 67%/. We used a method for semiquantitative analyses of frequency and severity of upper abdominal dyspeptic syndrome- epigastrial pain, epigastrial discomfort, nausea, vomiting and heartburn after the patient was carefuly questioned. Results: 1.Epigastrial pain in hemodialysis patients is equaly frequent in HP positive and HP negative- 51,61% v/s 48,39%, but in the II group/dyspeptc/- epigastrial pain is significantly more frequent in HP positive individuals. 2.Nausea and vomiting are signifincntly more frequent in hemodialysis grop then in II and III group-66,67% v/s 12,00% v/s 0%, but these symptoms are equaly frequent in HP positive and HP negative hemodialysis persons-52,94% v/s 47,06%. 3.Heartburn have sygnificantly less patient of hemodialysis group then in II group-3,92%v/s 77,00%. Heartburn have significantly more frequent HP positive individuals from II/dyspeptic/ group. Conclusion: uremic intoxication and the intragastric effect of nitrogen metabolic products are a possible ethiological factors for the upper gastroitestinal dyspeptic syndrome in dialisis patients, then the Helicobacter pylori infection.

Vascular access in our hemodialysis population

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PP

Obtaining and maintaining reliable access to blood vessels remains a major impediment to the long-term success of HD. On January 1, 2003. 196 patients on maintenance HD for at least one year (94F,102M; mean age 55.9±11.8 years with HD duration of 76.3±58.9 months) were analyzed retrospectively for types of permanent vascular access (VA), number of operations, episodes of thrombosis and access survival rate. AV fistulas (AVF) are the preferred form of VA(93.4% of our HD population). AV grafts(PTFE)(6.1%) and permcaths (0.5%) are reserved for patients where placement of AVF failed. Permanent access was created prior to the initiation of HD in 20 patients. The total of 291 operations were performed. In PTFE patients 39.4% of operations were secondary procedures (thrombectomies) vs 20.1% in AVF group. Overall there were 0.06 episodes of VA thrombosis per patient year. Analysis of VA survival rate (AVF vs PTFE) showed: at 1 year 85.7% vs 60.7%, at 3 years 71% vs 29% , at 5 years 60.5% vs 5.5%). Of 41 patients receiving HD for longer than 10 years, 29 retain their original AVF. The use of AVF in our center is similar to European and markedly different from US centers. PTFE has a higher incidence of thrombosis and lower survival rate compared to AVF.

Assessment of the hydration status and body composition using the bioelectrical impedance analysis method of patients undergoing hemodialysis

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PP

Aim: Bioelectrical impedance analysis (BIA) method is a non-invasive method for the estimation of Total Body Water (TBW) and Body Composition, widely used in hemodialysis (HD) patients. The aim of our study was to examine whether the hydration status of HD patients, clinically evaluated by dry body weight, correlates with TBW, as predicted with the BIA method. BIA had never been used again

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in our HD unit. Methods: A multi-frequency bioelectrical impedance devise was used and after HD TBW, %Fat Free Mass (%FFM) and %Body Fat (%BF) were estimated. The results were compared to reference values according to age, sex and race. Results: 18 patients, 12 male and 6 female, were examined with mean age 53.33±13.33 years and mean Body Mass Index (BMI) 22.667±2.043 kg/m2. Paired t-test was performed to determine the significance of difference of TBW, %BF and %FFM between the sample and the reference values. Level of significance was set at $p<0.05$. TBW and %BF were significantly lower in our sample compared to the reference values (30.83 kg vs 36.23 kg, $p=0.003$) and (22.19% vs 28.39%, $p=0.03$) respectively. No statistically significant difference was detected in the %FFM (64.66% vs 70.40%, $p=0.08$). The difference in TBW is desirable, as it is expected to reach normal values the day before HD. Conclusion: The clinically estimated HD patients' hydration status is comparable with that of the BIA method. BIA doesn't seem to provide additional data in the everyday practice.

Microscopic polyangiitis: clinical and laboratory characteristics and therapeutical approach

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PP

Microscopic polyangiitis is systemic necrotizing vasculitis of the small blood vessels of kidneys and lungs, but also of other systems and organs. We analyzed five patients who were treated at MMA during the period from 1998 till 2001. During the clinical manifesting phase the disease presenting with polyarthralgia, lung hemmorrhage and rapidly progressive glomerulonephritis. Oliguria was registered in all patients. In laboratory findings-unspecific factors of inflammation were increased:erytrocite sedimentation rate were ERS=102±14 mm/l/h, fibrinogen 6.3±1.2 g/l, severe anemic syndrom (Hb 7.3±1.4 g/l), high levels of urea (37.4±12.2 mmol/l) and creatinin (650±21.3 mmol/l). All the immunological findings were of normal values apart from anti-myeloperoxidase-ANCA at high level (1:128). After diagnosis of disease we started therapy with pulse doses of methylprednisolone (12.5 mg/kg/bw), followed by later continual peroral therapy with prednisone (1 mg/kg/bw) and continual doses of cyclophosphamide (2 mg/kg/bw). In three patients we conducted 5 intermitent plasma exchanges. In 4 patients treatment lead to full recovery of kidney functions (creatinine clearance 35 ±15 ml/min), apart from one patient who was treated with hemodialysis because he developed end-stage renal disease. Microscopic polyangiitis is a very rare disease with characteristic clinical manifestation, and diagnosis of disease is confirmed by positive anti-myeloperoxidase ANCA titer. If the immunosupressive therapy is conducted on time the development of kidney failure will be succesfuly stopped which leads to the stable clinical-laboratory remission.

Surgical interventions in transplant patients

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PP

Kidney transplantation is the treatment of choice of patients (pts) with chronic renal failure. In the period of January 1981. - January 1995. we analyzed 305 pts with transplanted kidney subjected to 47 (15,4%) operations. Emergency surgery was undertaken in 17 pts and elective in 30 pts. The most common emergency operations were urological (on the kidney and ureter), to be followed by abdominal. These operations were associated with the high mortality rate (35,3%). Out of the planned operations 9 had urological indications, and all had favorable outcome, except for a patient with testicular seminoma. Caesarean section was performed in 5 pts and cholecystectomy in 3. Five vascular operations were performed; one with fatal outcome (the mitral valvule surgery), three orthopedic, two ophtalmologic and two dermatological (carcinoma skin) operations were performed. The elective operations were associated with 6,6% mortality rate. Prompt surgery and team work provide a better outcome in cases of transplant pts.

Immunohistochemical analysis of γ-catenin in Wilms tumor

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PP

Background: γ-catenin and its homologue β-catenin are cytoplasmatic proteins that mediate adhesive functions by interacting with cadherin receptors and signaling activities by interacting with transcription factors. It has been suggested that γ-catenin can suppress tumorigenicity whereas beta-catenin can act as an oncogene. Aims: We investigated the correlation between the expression pattern of γ-catenin and histological type and stage of wilms tumor. Material and methods: γ-catenin expression was investigated using an indirect immunoperoxidase technique, applying antibody to γ-catenin. correlation of semi quantitatively scored adhesion molecule levels with histological type and tumor stage was performed for 26 primary and 2 metastases of wilms tumor. For statistic analysis we used Fisher,s exact test. Results: γ-catenin was present in most cases of Wilms tumor (75%). Most cases showed decreased expression of γ-catenin, while

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in 7 cases expression of γ-catenin was completely lost. Only one case of wilms tumor showed diffuse and strong expression of γ-catenin. γ-catenin expression was not in correlation with stage of Wilms tumor (p>0,05). Anaplastic type of wilms tumor displayed lower γ-catenin level in comparison with other types (p<0,05). Also, γ-catenin expression was significantly decreased in high risk tumors, which suggests that γ-catenin deficiency may be associated with poor prognosis. We could not detect γ-catenin staining in the nuclei of wilms tumor cells. Conclusion: Our results suggest that γ-catenin may have a tumor suppressor function in Wilms tumor.

Immunohistochemical analysis of Cyclin E expression in Wilms tumor

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PP

INTRODUCTION:. Neoplasia is characterized by abnormal regulation of the cell cycle. Cyclin E is both a regulator and target of the E2F transcription family in an autoregulatory loop that is necessary for progression from G1 to the S phase of the cell cycle and overexpression of cyclin E can accelerate the G1 phase of the cell cycle. AIMS: The aim of our study was to investigate cyclin E expression in Wilms tumor, to compare it with the expression in normal renal tissue as well as to see if there is a correlation between cyclin E expression in Wilms tumor with tumor stage, histologic type and prognostic group. MATERIAL AND METHOD: 28 cases of Wilms tumor and 2 samples of normal kidney tissue were studied using streptavidin-biotin-complex technique. Cyclin E expression levels were semiquantitatively scored. RESULTS: There was no cyclin E expression detected in normal kidney tissue. The expression of cyclin E was observed in the 14 cases (50%), more often in blastemal than in epithelial component of Wilms tumor: 50% and 25% respectively (p=0.005). There was not statistically significant inverse relationship between cyclin E expression and tumor stage (p=0.385). Cyclin E was found less frequently in high risk tumors then in tumors with good prognosis (p=0.046). Expression of cyclin E was detected in various histologic types of Wilms tumor, but there was no statistically significant association (p=0.769). CONCLUSION: Our results suggest that the expression of cyclin E is associated with prognostic group but not with tumor stage and histologic type.

Improvement in outcome of acute renal failure: more evidences pro

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PP

Acute renal failure (ARF) that need hemodialysis (HD) treatment is related with high mortality ranging 50%. The aim of this study was to analyze age, disease severity and catabolism intensity influence on ARF outcome in patients that needed HD treatment during 15 years' period (1987–2001). The retrospective, single centre study included 583 patients, 428 male, 155 female, age 49 ± 15 years, treated by intermittent HD using cuprophane membranes with surface of 1.3 m2. Liano's ATNISS score and HDS score were calculated to estimate disease severity and catabolism intensity in ARF patients. Average age of patients significantly increased during 15 years' period for more than one decade (44 to 55 years; p=0.0359), especially during period after 1997 (47 ± 14.5 vs. 53 ± 14.7, p=0.00015). Disease severity showed significant increase comparing periods 1992-96 and 1997-2001 (ATNISS 0.385 ± 0.197 vs. 0.437 ± 0.208; p=0.00137), while catabolism intensity during these periods remained similar (HDS 0.569 ± 0.145 vs. 0.582 ± 0.127; p=0.357). Mortality was significantly higher during period from 1987-91 (49/83; 59%) comparing with 1992–96 period (132/324; 41%; X2=8.23, p=0.0045), as well as in comparison to period 1997–2001 (114/250; 45.6%; X2=3.98, p=0.0471). Mortality was similar when comparing periods 1992-96 and 1997-2001 (X2=1.169, p=0.283). These results suggested improvement in outcome of patients with ARF that needed HD treatment, despite increasing age, disease severity and use of bioincompatible membranes.

Darbepoetin alfa or rhuEPO for the therapy chronic renal failure's anemia? Comparison between effectiveness and cost

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PP

Darbepoetin alfa is the result of the scientific effort in last years with target the simplification of the dose of erythropoetin and the reduction of the cost because of its use for the treatment of anemia of chronic renal failure (CRF). The aim of this study was the calculation of effectiveness of darbepoetin alfa with respect to the cost at the therapy of anemia of CRF. Material-Method: In this study 13 stable patients in haemodialysis were included (6 males, 7females), 24-87 years old.The time in haemodialysis was 18-120 months. The level of ferritin was 200-1000 ng/ml and those of haemoglobin was stable (Hb=11-13,5 g/dl). We gave darbepoetin alfa to our patients instend of rHuepo in

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proportion 200 iu/1kg and afterwards we were modifing the dose and the frequency according to the haemoglobin (desirable limits:11-13,5 g/ml). The effectiveness and the cost of darbepoetin alfa were educated for 8 months in comparison to the therapy of rHuepo for the same time. Results: All patients tolerated the therapy very well.In the end of the following time the quantity of darbepoetin alfa, that had given, was found reduced 8,8-77,3% for 7 patients. For 1 patient did not exist alteration, although for 5 patients the given quantity of darbepoetin alfa was found increased 3,7-36,8%. Respectively the total quantity for all patients in the end of following time had been reduced 16,62% and the cost of the therapy was finally reduced 7,96%. Conclusions: The therapy of anemia of patients in haemodialysis with the use of darbepoetin alfa is safe and effective. The cost is decreased with respect to the cost of the therapy with rHuepo.

The influence of inhibition of the renin-angiotensin system on the fibrinolytic system in the different kinds of glomerulonephritis

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OP

THE AIM of this study was to obtain the influence of inhibition of the rerin-angiotensin system (RAS) on the tPA and PAI-1 in the different kinds of glomerulonephritis. MATERIAL-METHODS. In the study were participated 20 patients 14 males and 6 females with mean age 45,3±15,01 years. The kidney biopsy revealed in 6 patients focal-segmental GN, in 4 membranous, in 3 membranoproliferative, in 2 IgA nephropathy and 1 minimal change. All patients were treated with aCEI, ARB and combination for 8 days respectively with free medications of 8 days. At the end of each circle and at the end of the periods free of medications tPA and PAI-1 were measured. RESULTS. In membranous, membranoproliferative and in minimal change, in which there is no accumulation of matrix in the interstitium, tPA and PAI-1 stayed stable before and after the therapy, with aCEI, ARB or the combination. In IgA nephropathy which is defined with accumulation of matrix, was observed a serious increase of PAI-1 and a severe decrease of tPA, compared to the other glomerulonephritis and with consequents changes after the inhibition of RAS. (PAI: p=0,0450 tPA: p=0,00002). CONCLUSIONS. In IgA nephropathy inhibition of the RAS leads to the balancing of fibrinolytic system in spite to the antihypertensive result.

The effect of calcium folinate treatment on renal function and plasma homocysteine concentration in diabetic patients

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PP

AIM of our study was to investigate the possible effect of calcium folinate treatment on (a) urinary albumin excretion (UAE) and (b) plasma homocysteine (Hcy) concentration in patients with non-insulin dependent diabetes mellitus (NIDDM). PATIENTS-METHOD: 19 patients (11 male and 9 female) with NIDDM and average age 69.3±9.8 were involved. Exclusion criteria were renal insufficiency and megaloblastic anemia. All patients underwent laboratory tests prior and post treatment. The tests included total blood count, plasma homocysteine, vitamin B12 and folic acid concentrations, blood glycosylated Hb as well as UAE estimation in a morning urine specimen. Treatment included orally administered calcium folinate 15mg/day for 30-40 days. RESULTS: Paired samples t-test prior and post treatment revealed the following:

Parameter	Prior	Post	P value
Hcy (μmol/L)	14.38±5.73	11.68±4.19	0.05>p>0.02
UAE (mg/24h)	46.16±30.82	23±31	0.1>p>0.05
Folic acid (ng/mL)	8.03±3.15	14±3.13	0.001>p
MCV (fl)	91.86±6.07	88.72±6.58	0.01>p>0.001

CONCLUSION : Calcium folinate treatment in patients with NIDDM, even without overt folic acid deficiency resulted in: (a) statistically significant reduction in plasma homocysteine concentration, which is known to be an independent risk factor for atherosclerosis and (b) reduction in UAE, which constitutes a prognostic index for diabetic nephropathy development. It seems possible that plasma folic acid concentration does not reflect intracellular concentration.

The adipose tissue accumulation in visceral region in microalbuminuria pathogenesis in NIDDM patients

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PP

Aim of our study was to evaluate the role of anthropometric factors, inflammation mediators and diabetes control in the

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development of urinary albumin excretion (UAE) in patients with non-insulin dependent diabetes mellitus (NIDDM). METHODS-MATERIAL 46 patients with NIDDM, 23 with and 23 without UAE were selected. Their mean age was 66,63+/-12,65 years. Exclusion criteria were renal disease, chronic or acute inflammation and use of corticosteroids, NSAIDS or aspirin. Body mass index (BMI), waist to hip ratio (WHR), glucosylated Hb (HbA1C), white blood cells, serum total proteins and albumins and C - reactive protein were evaluated. RESULTS Patients with UAE (mean+/-SD: 183,06+/-43,2 mg/24h) compared with patients without UAE (13,45+/-4,0 mg/24h) showed statistically significant difference only in CRP (p=0,01), but no statistical difference (p=0,911) in HbA1C levels. In all patients UAE was positively correlated with waist perimeter (r=0,31), BMI (r=0,33) and CRP (r=0,48). CONCLUSION These results indicate that the degree of obesity plays an important role in endothelium function.

Sequential therapy with levofloxacin of complicated urinary tract infections: a pivotal study

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PP

Levofloxacin is a second generation fluoroquinolone with a post marketing history of well tolerated and successful use in a variety of clinical situations. The aim of this open, prospective, single center study was to asses the efficacy and safety of levofloxacin in the treatment of complicated urinary tract infections. Fifteen patients (6males; 9 females; mean age 46(18 years) with active urinary tract infections and anatomic or functional abnormality of the urinary tract were treated with levofloxacin 500 mg i.v. once daily for 2 days followed by levofloxacin 500 mg orally once daily for the next 5 days. E.coli, S.epidermidis, Ps.aeruginosa and Citrobacter were isolated from the urine specimens of the patients before the treatment. The presence of clinical signs (lumbal pain, temperature, disuria) and some laboratory data as Er sedimentation rate (ESR), the count of white blood cells (WBC), serum creatinine (sCr), C-reactive protein (CRP), leukocyturia, erythrocyturia, proteinuria (g/24h) and urine culture were followed before and after the treatment. Clinical success with disappearance of all clinical signs of urinary tract infection was obtained in 14 patients (94%). There was a decrease in ESR, WBC (from 6,9(1,7 to 6,3(1,9), CRP (from 24,2(36 to 3,8(4,8 mg/l) after the treatment. Leukocyturia disappeared in 87% of the patients and in another two decreased. Serum creatinine did not change. The microbiological eradication rate was 87%. No adverse events were registered. We conclude that sequential therapy with levofloxacin 500mg daily for 7 days is an effective and well-tolerated treatment of complicated urinary tract infections.

Treatment with mycophenolate mofetil and corticosteroids of patients with lupus nephritis

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PP

We report the preliminary results of the treatment with MMF and corticosteroids of patients with lupus nephritis. Eight adult patients (1M; 7F; mean age 26.5±5.1) with lupus nephritis (class IV of WHO classification) and nephrotic syndrome were treated with MMF 2 g/d and Prednisolon 0.5 mg/kg/d for 4 months. Proteinuria (uPr), serum albumin (s alb), cholesterol (chol), creatinine (sCr), concentration of Mycophenolic Acid (MPA AUC12(mg*h/L) and lymphocyte cellular populations in peripheral venous blood (using monoclonal antibodies) were followed at the 30-th, 60-th, 90-th and 120-th day. The results of the treatment are summarized in the following table:

	0. Day	30. Day	60. Day	90. Day	120. Day
uPr (g/24h)	5.1±1.6	2.2±1.1*	1.9±1.5*	1.7±1.4*	1.4±0.9*
s alb (g/l)	29.4±6.2	31.6±6.7	34.1±5.7*	36.5±5.2*	37.3±4.4*
Chol (mmol/l)	8.4±1.8	8.7±1.6	7.7±1.0	7.6±2.7	6.9±2.5
sCr (μmol/l)	119±64	100±37	105±33	120±52	115±46
MPAAUC	12	43.6±12	53.3±21	63±25	60.1±22

Four patients reached a complete remission (including negative tests of immune activity) and the other 4 patients improved. Two patients were with CRF at the beginning of the study and they improved the renal function at the end. The successful outcome correlated with the level of helper/inducer (CD3+/CD4+) T cells (r=0.83) and with cytotoxic (CD8+11b-) T cells (r= -0.72) at the start of the therapy. We consider that the combined therapy with MMF and Prednisolon is promising in the treatment of patients with lupus nephritis and nephrotic syndrome. Further investigations under the necessary personal dose and treatment time are needed.

The effect of erythropoietin on prolactin level in haemodialysed males

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PP

Introduction: There are various endocrine disturbances present in haemodialysed patients, that are improved after treatment with erythropoietin. Literature data sugest that one of causes of hyperprolactinaemia is erythropoietin deficiency. Aim: The aim of this study was to evaluate the ef-

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fects of erythropoietin on prolactin level and sexual function in haemodialysed males. Material and methods: Our survey included 55 males that had been on the cronic haemodialysis treatmet three times per week. Erythropoietin therapy (R-Hu EPO) received 40 patients and 15 patients were without therapy. Patients were followed for a year and they were subjects of inquire about sexual desire, potention, sexual activity and satisfaction. Results: Patients who recived erythropoietin (40 patients) had average age of 46,0±10,0 years and haemodialysis duration of 3,95±2,33 years. Average age of patients who did not recived erythropoetin was 47,1±5,6 years and haemodialysis duration of 3,73±1,91 years. The difference between patients with and patients without erythropoietin therapy was not statisticaliy significant. Administration of erythropoietin led to a significant decrease of prolactin levels at the end of the therapy in comparison to the beginning ($p<0,001$). The prolactin level decreased from 522.0±236.2 mIU/ml at the beginning to 379,2±170,4 mIU/ml at the end of the study. The difference in prolactine level in the group that did not recive erythropoetin (648,3±301,9mU/ml) compared to patients who recived erythropoetin was highly significant ($p<0,01$). Sexual function was improved in 50% of patients (20/40) and using regression analysis we found that positive effect of erythropeotin was present in 85% of patients. Conclusion: Erythropoietin treatment led to normalization of prolactin level as well as to an improvement of sexual function in haemodialysed men.

Renal transplantation in Macedonian children. Preliminary expirience

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PP

During the period 1999-2002 year a total of six children have received a living kidney graft, 4 at the Clinical Center Skopje and 2 at the Transplant Center-Thessaloniki. There were 3 males and 3 females. The underlying diseases that led to ESRD were: FSGS (one), obstructive uropathy due to urethral calculus (one), autosomal dominant familial nephrotic syndrome (one), dysplastic kidneys (one) and unknown (two). The immunosuppressive protocol included induction with Daclizumab-Basiliximab, Mycophenolat Mofetil, Cyclosporine and Prednison. The graft function was promptly established in all children. Three children had complications- posttransplant hypertension in two, cyclosporin nephrotoxicity in one and recurrence of the original disease (FGSG) in one. Transplant biopsy was performed in two children, in one it displayed recurrent disease (FGSG) and in one cyclosporin nephrotoxicity. There were no rejection episodes. Although this is a small series of transplanted children the results in the term of the graft function are satisfactory and complications have been properly controlled.

Different outcome of Wegener's granulomatosis with severe renal and pulmonal involvement

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PP

Wegener's granulomatosis is a distinct clinicopathologic entity, characterized by granulomatous vasculitis of the respiratory tract together with glomerulonephritis. The disease is uncommon and the true incidence is difficult to determine. We report on 4 cases of Wegener's granulomatosis detected at our Department, during the last 4 years (mean age 40,6+-8,2 years), with severe renal and pulmonal involvement, all of them ANCA (+). The first patient was with diffuse mesangioproliferative glomerulonephritis with fibroepitelial crescents on renal biopsy. Clinical features at start of the follow-up were as follows: hypertension (150/90 mmHg , well regulated with therapy; renal failure (serum creatinin 187 mikromol/l) and non-nephrotic proteinuria (0,61 g/24 h). The normalization of the global renal function was achieved after a period of 21 months. The second case with necrotizing glomerulonephritis and renal failure(serum creatinin 171 mikromol/l), also non-nephrotic proteinuria (0,27 g/24 h), achieved remission by the therapeutic regimen after 2 months. The other 2 cases were with rapidly progressive glomerulonephritisd, diffuse extracappilar crescents on renal biopsy, and had poor prognosis. All of the cases had typical lung involvement as multiple, bilateral nodular cavitary infiltrates (diagnosed by computerized tomography). The treatment of all cases included steroids, cyclophosphamide and plasmapheresis and heamodialysis was necessary in 2 cases with worse prognosis. Both patients died because of respiratory complications. Despite the used therapy, we have different outcome of the disease, in 2 cases complete remission was achieved, but in the other 2 cases it was not possible to acvhieve remission.

Morphometry of glomeruli in IgA-nephropathy

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OP

Using a computer software of morphometric analysis (Videiotestmaster-4-2000), the following glomerular parameters were determined in 50 patient with IgA-nephropathy (IgA-N): area of th eglomerulus, diameter of the vascular bundle, diameter of the capillary loop, thickness of the capsule, the number of glomeruli per the mean area of the interstitial

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space section, and area of the interstitium per glomerulus. The main parameter to be relied on was the area of glomerulus in μm2. As donors at the comparative analysis, biopsies of practically healthy people calculated with the aid of the same program were used. It has been established that patients with IgA-N consist of two groups: Group 1 – area of the glomerulus is statistically significantly increased (p<0,001) compared with norm, and Group 2 – th eglomerulus area is lower, although statistically non-significantly, that normal values. The different area of glomeruli leads to heterogeneity of the number of glomeruli per the standard area of th ebioptate section: in donors- 11.2 glomeruli, in Group 1 – 7.4 glomeruli, in Group2 – 6.3 glomeruli. The area of interstitium (μm2) in donors per glomerulus is 4530.17 μm2 , in Group1 – 8097.98 μm2 , in Group2 – 7345.56 μm2 . Hence, it can be concluded about the different number of functioning nephrons in Group 1 and 2 that differ by the degree of hyperfiltration, which can be the cause of intraglomerular hypertension. Area of th eglomerulus affects arterial pressure (τ=0.61). In group 2 there were revealed a decrease of the capillary loop lumen to 9,9 μm (while in donors, 10.33 μm) and an attenuation of the basement membrane to 0.29 μm (in donors, 0.31 μm). A part of loops are eliminated from normal functioning, which also leads to an increase of the intraglomerular and systemic pressure ((τ=-0.45). The obtained data can determine the degree of progression of the disease.

Dynamics of parameters of the renin-aldosterone system on the background of therapy with inhibitors of angiotensin converting enzyme

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PP

Complications in the form of the ischemic heart disease (IHD) often occur in patients with glomerulonephritis and are the cause of death in patients on programmed hemodialysis in 50% of cases. The goal of the work: to evaluate dynamics of parameters of the renin-aldosterone (RAS) before and after therapy with inhibitors of angiotensin converting enzyme (ACE) in patients with IHD. Materials and methods: examined were 53 patients with IHD who had myocardial infarction (MI). The paients were included into the study not earlier than in 6 months of development of MI. Levels of plasma renin (PR) and plasma aldosterone (PA) were determined in the patients before and after treatment with spirapril at a dose of 6 mg/day. Using method of ultrasound dopplerography, the presence of atherosclerotic plaques (AP) was evaluated in carotid arteries. Results: the mean age of the patients was 51.8(1.03 years. In the total group before and after treatment the PR level increased (p<0.05), whereas the PA did not change statistically significantly, however there was a tendency for its decrease. Then the patients were divided into 2 groups: Group 1 - patients with AP (17 people), group 2 - patients without AP (36 people). Before the therapy the PR level was higher in the Group 1 (1.22(0.19 ng/ml.hr in the group 1 vs 0.73(0.1 ng/ml/hr in the group 2, p<0.01). Therapy with spirapril was accompanied by a rise of the PR level in both groups (2.76(0.36 ng/ml/hr in the Group 1, p<0.05; 1.9(0.2 ng/ml/hr in the Group 2, p(0.001). A correlation connection by Kendall has been revealed between the PR level and the presence of AP ((=0.49; p=0.018). The PA in both Groups did not change statistically significantly, however, a tendency for its decrease was observed, which was more pronounced in patients of the Group 2. Conclusion: treatment with spirapril was accompanied by an increase of the PR level in both Groups of patients. A dependence of the increase of PR level on the presence of AP by data of dopplerography.

Nasal staphylococcus aureus carriage and peritonitis in children on chronic peritoneal dialysis

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PP

Peritonitis is the most important complication in children on chronic peritoneal dialysis (CPD). The relationship between nasal carriage of Staphylococcus aureus (NCS) and peritonitis is still controversial. In this prospective study we wanted to evaluate the effect of NCS on peritonitis in children on CPD. This study was carried out on 26 patients undergoing CPD (15 boys, 11 girls), aged 2.5 to 18 years old, (mean age: 10.11±4.68 years) during the period between September 1, 2001 and March 31, 2003. To determine the NCS status, nasal smears were taken from all patients and care-takers, monthly. In case of positive results, topical mupirocin was applied. Statistical evaluation was made by student's t-test. Among these 26 patients (follow-up period 351 pt-mos) 17 of them (Group I) showed 33 peritonitis episodes (in 257 pt-mos); 9 of them (Group II) had no peritonitis episode (in 94 pt-mos). Of the 33 peritonitis episodes, 15 (46%) had positive results (Pseudomonas spp in 6, E.coli in 4, Staphylococcus aureus in 2 and other several microorganisms in each 3). Of the 17 patients who had one or more peritonitis episodes, 14 patients and/or care-takers showed positive results for NCS. The incidence of NCS among 9 patients who had no peritonitis was 67% (6 of 9 cases). The rate of NCS status in these two groups was not statistically different(p>0.05). In conclusion, the NCS status has no effect on the risk of peritonitis in children on CPD.

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Factors influencing 10-year survival of chronic allograft nephropathy

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OP

It is well known that Cyclosporine (Cs) A subdosing shortens kidney allograft survival. We investigated factors of 10-year survival of chronic allograft nephropathy (CAN) developing in conditions of low CsA TBL during 1styear after transplantation. In 37 patients with biopsy proven CAN/CNI (13.8+-1.5th moth) 32% had allograft survival >=10 years, 68% returned to dialysis within 84 months. They received CsA(2-3mg/kg/d) during 1styear, standard Pr and Aza doses. Kidney donors were aged<55years. Kidney allograft morphologic characteristics (BANFF classification), interstitial MNC immunotyping with serial MoAb staining to CD2, CD3, CD4, CD8, CD11b, CD14, CD25,C D45, MHC I and DR, DP, DQ antigens on frozen biopsy specimens, and kidney function during 1styear all were compared with respect of 10-year graft survival. Factors of returning to dialysis before 10 years were: alloatherosclerosis CV>1 R=1.98(1.21-3.23),p=0.007, glomerulitis G>1 R=1.09(1.04-1.14),p=0.000, MHCII+ and CD4+MNC in interstitial infiltrates in 12-18th month; repeated acute rejections(AR) first 6 months,R=1.52(1.04-2.22),p=0.03; together with an increase in serum creatinine>182.5 umol/l at 1styear R=1.007(1.004-1.011),p=0.000 and proteinuria>0.3g/d starting from 6thmo,R=1.32(1.10-1.58),p=0.003. Patients returned to dialysis did not have significantly lower CsATBL, however, those who developed endothelitis in 2ndyear had very low CsATBL at 7th(p=0.041) and 8thmo(p=0.049), those with pronounced alloatherosclerosis (CV) in 2ndyear had lower CsATBL in 3-5th mo(p=0.036). Patients with repeated AR in 2-6thmo were at risk to develop allograft glomerulopathy and to sustain interstitial MNC with higher %DR,DQ and CD14+cells. Multinomial Cox regression analysis pointed out factors of failed 10-year graft survival:serum creatinine>182.5umol/l at 1styear, CV>1 and DQ (DR) MNCi>10%. Conclusion: CsA < 3 mg/kg/d during 1styear directly affects alloatherosclerosis,repeated AR inflence allograft glomerulitis and interstitial MHC II expression; altogether results in inferior 10-year allograft survival.

Time on dialysis: a comparison based on personal models of renal disease and quality of life

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PP

One study examining the influence of personal models of renal disease on quality of life (Griva et al, 1999) revealed that control, consequences and identity of the disease consistently predicted quality of life in both dialysis and transplant patients, even after adjusting for other relevant (sociodemographic and medical) factors. We examined how long-term HD influences quality of life and illness mental representations of well-dialyzed patients (15 hrs/week, KT/V > 1.5, Hb > 11 g/dL), without diabetes or co-morbidities. We compared HD patients with < 1 year of treatment (Group A, N = 36, 23 M, age = 46.5 years), with matched patients on at least 6 years of treatment duration (Group B, N = 46, 23 M, age = 46 years), using as instruments the Illness Perception Questionnaire (to assess beliefs about time-line, consequences, coherence, emotional response, personal control and treatment control of the disease) and the Short Form Health Survey Questionnaire (SF-36) (to assess quality of life dimensions: physical functioning, social functioning, role-functioning emotional, role-functioning physical, vitality, bodily pain, mental health and general health perceptions). Quality of life (QOL) assessment: Group B patients (with a longer dialysis duration) obtained lower scores only at the physical functioning scale - mean 53.7 vs 58 for the group A patients, p<0,05), while there was no significant difference in mental QOL. Mental illness representations assessment: in group B patients the perceived consequences of the disease are higher compared to subjects with less time on HD – group A, p< 0.05. Also, group B patients were more likely to hold a chronic timeline (i.e. their illness is clearly perceived as chronic, "for ever ill"), have stronger personal control beliefs and significantly less emotional response (all differences from group A significant, p<0.05). Finally, patients with a longer HD duration perceived their treatment being less efficient for ESRD. Multiple regression analysis showed that the perceived course of the disease (timeline) predicted QOL in new HD patients whereas perceived disease consequences and perceived control of the disease predicted QOL in patients with a longer dialysis duration. Our results suggest that time on HD influences the personal models of the disease held by ESRD patients, and these mental illness representations affect their QOL.

Urinary infection registered in nefrologic ambulance in the center of hemodialysis in Debar from year 1998, 1999 and 2000

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PP

The Urinary infections (UI) has an significant persentage in total kidney pathology. Our point was to do analyses in their persentage maintenance in reference with total examinations done, having in mind sex, and age, the etiological causer

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area of infections (lower and upper urinary ways-UW), the degree of acting of favorite factors etc. Medical documentation is used in the center of hemodialysis as well as personal medical documentation of the patients. The information are analyzed in retrograde. For appointing the diagnoses of urinary infections except the clinical descriptions and objective findings laboratory analyses are used, results of urinary-culture, ultrasound investigation of abdominal organs and urinary-genital tube, X-ray investigation, etc. During the three year period described for, (1998, 1999, 2000) totally 5842 examinations were being done. 16.1% of them are because of Urinary Infections (5842/944). As about the sex 58% (944/548) are women, and 42% (944/396) are men. According the age the UI are more significant between 18-45 years old (548/330) until for men over 45 years of age (396/179). Some of favor factors for setting of UI are recognized to 33% of cases (5842/1927). More sufficient factor is calculous of urinary tract with 36.5% (1927/703). Totally are analyzed 211 urinary-cultures which 71% were positive, disposal of agent abaut 87% of the cases Escherichia cili is isolated.

Staphilococcus aureus carriage in continuous ambulatory peritoneal dialysis patients, their relatives and medical personel and relation to peritonitis and exit site infection

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PP

Peritonitis and exit site infection remain a serious problem in CAPD patients. Hygenic training of patients and relatives very important step to protect infection complication.To determine the carriage of staphilococcus aureus should take into account among CAPD patients since this is claimed that it might be responsible from infection. The aim of this study is to determine staphilococcus aureus (SA) carriage in CAPD patients and their companions and medical personel who are responsible to take care of these patients. Materials and method: Nasal and axillar smear were collected from 16 CAPD patients (5 female /11 male) who were followed up in KOU medical school-Izmit-Turkey, 13 relatives and 8 medical personel. Median age of patients was 56(33-72) and mean duration of follow up period was 30 months (2-79). Results were analysed by using Chi-square test (Software epi 6.04-SPSS 10.00). Results: Nasal smear was positive for SA in 10 patients (61%), 4 relatives (30.2%) and 3 nurses (37.5%). 65% of patients (6/4) who suffered from infection sometime during follow up (peritonitis and/or exit site) was carrier for SA; among the ones who never have had infection, carrier ratio was found 60% (10/6), difference was not significant. SA carriage was determined in one (16.6%) out of six infected and 3 (30%) in 10 non-infected patients relatives. Difference was not significant also. Conclusion: Since our training program for hygenic rules is sufficient, it is not found any relation between SA carriage and infection. It is recomended to pay attention to protect CAPD patients from carrier. These patients, their relatives, and medical personel should screen periodically for SA carriage.

Hypertension, microalbuminuria and ACE gene I/D polymorphism in type I diabetic children

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PP

OBJECTIVE: The aim of the study was to investigate blood pressure (BP) in type I diabetes mellitus (DM) children previously accepted normotensive and the relation with angiotensin (ACE) gene I/D polymorphism. PATIENTS AND METHOD: 69 type I DM children who were normotensive with casual BP measurement were included the study. The mean DM diagnosis age was 8.1±3.6 years, median follow-up time was 6.3 years. Twenty-two (31,9%) of patients were microalbuminuric (>20 μg/min). BP was determined by ambulatory blood pressure monitoring (ABPM) with SpaceLabs 20907 device. ACE gene I/D polymorphism was studied with PCR method in 58 patients. RESULTS: Eighteen (26.1%) of 69 patients accepted normotensive were found hypertensive with ABPM. Twenty-three (33.3%) patients were systolic and 8 (11.6%) were diastolic non-dipper. Hypertension was found more frequently in microalbuminuric patients versus to normoalbuminuric patients (40.9% vs 19.1%, p=0.078). Dystolic BP load was found higher in microalbuminuric group than normoalbuminuric group (19.9% vs 12%, p=0,039). Microalbuminiria was significantly correlated with mean HbA1c levels from diagnosis (r=0.306, p=0,011), mean diastolic BP (r=0.313, p=0.009), MAP (r=0.290, p=0.015) and diastolic BP load (r=0.324, p=0.007). MAP was found correlated with duration of DM (r=0.263, p=0.029) and mean HbA1c levels from diagnosis (r=0.297, p=0,013). ACE gene I/D polmorhism was not found significantly correlated with the other parameters. CONCLUSION: Hypertension and deteriorated BP biorhythm is frequent than expected in especially microalbuminuric type I DM patients who were normotensive with casual BP. Causal BP measurement is not sufficient and we recommend ABPM in evaluating BP in DM patients.

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Hypertension, cardiovascular disease risk and ACE gene I/D polymorphism in pediatric chronic hemodialysis patients

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PP

Hypertension influences cardiovascular disease (CVD) in hemodialysis patients. We evaluated CVD, hypertension and ACE gene I/D polymorphism in pediatric hemodialysis patients. Nine chronic hemodialysis patients (mean age 14.9±5.9 years, median duration of hemodialysis 33 months) and 20 healthy controls were included the study. Echocardiography, ambulatory blood pressure monitoring (ABPM) with SpaceLabs 20907 device, telecardiography were performed and interdialytic weight gain, inferior vena cava indices, pressure strain elastic modules (Ep), corrected Ep* (aortic stiffness) and myocardial performance index were calculated. ACE gene I/D polymorphism was determined using PCR method. Four of 9 patients were hypertensive, 8 were systolic non-dipper, 3 were diastolic non-dipper with ABPM. Aortic stiffness was found higher in hemodialysis patients than healthy controls (4.25±3.80 and 1.74±0.59, p=0.007 respectively). Interdialytic weight gain was correlated with left atrium diameter and diastolic blood pressure load (r=0.668, p=0.049 and r=0.690, p=0.040). Cardiotoracic index was correlated with systolic and diastolic blood pressure load and 24 hours MAP (r=0.668, p=0.049 and r=0.813, p=0.008 and r=0.888, p=0.002 respectively). The observed allele frequencies were DD in 4, ID in 3 and II in 2 patients. There was no statistically significant correlation between ACE gene I/D polymorphism and echocardiographic and ABPM parameters. In conclusion, as an early marker of arteriosclerosis high aortic stiffness predicts to high CVD risk, cardiotoracic index is a good indicator of hypertension and hypertension is related to interdialitic weight gain in pediatric chronic hemodialysis patients. ACE gene I/D polymorphism is not related to hypertension and CVD in our study group.

Which parameter is more influential on the development of arteriosclerosis in hemodialysis patients

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PP

Arteriosclerosis is characterized by stiffening of arteries. The incremental elastic modulus (Einc) measurement is a good marker of arterial wall stiffness. Arteriosclerosis is characterized by stiffening of arteries. Metabolic, inflammatory and hemodynamic alterations cause structural changes and vascular complications in end stage renal disease. The aim of the present study was to evaluate the factors that may affect the development of arteriosclerosis by measurement of Einc in hemodialysis (HD) patients. Thirty two patients (16 men; 16 female) on chronic HD with a mean age of 42.2±19.3 (range: 15-80) were included in the study. The carotid Einc was measured to determine arteriosclerosis by high resolution echo-tracking system. Einc measurement was calculated from transcutaneous measurements of carotid arterial internal diameter and wall thickness and carotid pulse pressure. Common carotid compliance (CCC) and distensibility (CCD) were determined from changes in carotid artery diameter during systole and simultaneously measured carotid pulse pressure. Serum levels of calcium (Ca), phosphorus (P), parathormon (PTH), ferritin, C-reactive protein (CRP), pre-dialysis systolic blood pressure (SBP), predialysis diastolic blood pressure (DBP), pulse pressure (PP), age, HD duration, CCC and CCD were correlated with Einc in all patients. A significant positive correlation was found between Einc and age (r= 0.40, p<0.02), SBP (r: 0.39, p<0.02), PP (r: 0.40, p<0.02), Ca (r:0.43, p<0.01), CRP (r: 0.38, p< 0.02). As expected, Einc was correlated inversely with CCD (r: -0.77, p<0.0001). The correlation between Einc and HD duration, DBP, ferritin, P, PTH and CCC was not significant.In conclusion, the stiffening of carotid artery in HD patients is related not only to hemodynamic changes (increased SBP, PP) but also to metabolic (increased Ca) and inflammatory (increased CRP) responses. Carotid Einc is accepted independent risk factor for cardiovascular mortality. Because of the positive correlation between Einc and serum Ca, vitamin D and Ca containing P binder should be used carefully in HD patients.

Is there any relationship between serum levels of IL-10 and atherosclerosis in hemodialysis patients

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PP

Background Cardiovascular complications due to atherosclerosis (AS) are the major cause of mortality in hemodialysis (HD) patients. Inflammation may play an important role in the development of AS. Several studies have been demonstrated the association of acute phase proteins and cytokines with AS in the general population and in HD patients. Interleukin-10 is anti-inflammatory cytokine. The aim of study was to compare serum levels inflammatory and anti-inflammatory indicators in HD patients according to presence or absence of AS. Methods. Thirty three HD patients were obtained. Atherosclerosis was defined the detec-

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tion of plaques by Doppler ultrasonography. The patients were sub grouped according to presence or absence of plaques. Serum levels of IL-1, IL-2, IL-6, IL-10, C-reactive protein (CRP) and tumour necrosis factor-α (TNF-α) were measured. The factors for AS such as age, gender, hypertension, hyperlipidemia and HD duration were also evaluated. Results. We found that the patients with AS had significantly higher hs-CRP and lower IL-10. Blood pressure values were also increased in patients with AS. Additionally, there was an increase correlation between CRP and IL-10. Conclusion. AS (+) patients undergoing HD had low serum levels of anti-inflammatory cytokine IL-10 and high serum levels of hs-CRP. These results may suggest that the limitation of anti-inflammatory response in atherosclerotic uremic patients is a triggening or contributing factor for AS.

Comparative study on obtaining a good quality morphological sample by kidney biopsy with an automatic needle pro-mag i 2.2 vs. a non-automatic needle tro-cut

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PP

Performing a renal biopsy is an obligatory invasive manipulation for finding the right morphological diagnosis. Indications for this are unclear proteinuria and hematuria, arterial hypertension, nephrotic syndrome. The aim of the study was to compare the quality of the tissue sample obtained with automatic needle PRO-MAG I 2.2 and with non-automatic needle Tro-cut. A tissue sample from kidney biopsy (KB) was observed in two groups of 60 patients each. Nineteen biopsies from first group (31,67%) were with 20 and more glomeruli, whereas in the second group only 4 were with 20 and more glomeruli. With 10 and more glomeruli were 20 biopsies from the first group (33,33%) and 19 biopsies from the second group (31,67%), respectively. There were no glomeruli found in 1 biopsy from the first group (1,75%) and in 4 biopsies from the second group (6,67%). We found that 65% from the samples in the first group and 38,34% from the second group were with high quality concerning the number of glomeruli per samle ($p<0,01$). We conclude that KB by an automatic needle PRO- MAG I 2.2 gives an opportunity for obtaining a significantly better biopsy sample and more precise diagnosis.

Association between post-transplant antibody production and renal transplant rejection

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PP

An association between post-transplant production of donor specific antibodies and the incidence of rejection has been demonstrated although some data have been difficult to interpret due to the poor definition of HLA specific antibodies.We have used enzyme-linked immunoabsorbent assays (ELISA) which enable increased sensitivity of detection and more accurate characterisation of HLA antibodies to re-evaluate their role in transplant outcome. 115 consecutive primary cadaveric renal transplants were carried out in a single transplant centre.15 patients without post-transplant serum samples were excluded from the study.Patients with primary function were given cyclosporin (standard immunosupression) therapy and the mean number of HLA mismatches at HLA-A,-B and DR were 0,8, 0,97 and 0,38 respectively. Pre- and post-transplant sera were selected from each patient and screened using the LAT M(One Lambda) ELISA based assay to detect the presence of HLA class I and class II specific antibodies and the results correlated with transplant outcome. 78 patients were HLA antibody negative pre-transplant.Post-tpx 52 remained negative (-/-),13 developed HLA class I specific antibodies ,8 HLA class I and class II specific antibodies and 5 developed HLA class II specific antibodies (26-/+).Ten year follow up data was available for 54 ofthe 78 patients (33-/-, 21-/+), 6 % of the -/- transplants failed as compared with 76 % of the -/+ transplants (p=0,0000005 Yates corrected). This study has demonstrated that even in a well matched patient group HLA specific antibodies are produced post-tpx which are signifficantly associated with transplant rejection.

The deletion polymorphism of the ACE gene is not an independent risk factor for renal scarring in children suffering from vesico-ureteric reflux

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OP

The deletion (D) polymorphism of the gene encoding angiotensin-1 converting enzyme has been implicated as a risk factor for progressive renal disease in several condi-

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tions.This study was designed to evaluate the association between homozygosity for the D allele and susceptibility to renal scarring in children with vesico-ureteric reflux(VUR). Two-hundred children with primary VUR(all grades) were recruited into the study. Patients were stratified into two groups according to the presence or absence of renal scarring. One-hundreed –and twelve patients(group 1) had evidence of renal scarring.Ninety-four children had no evidence of renal scarring (group 2). ACE genotypes were determined by polymerase chain reaction (PCR) amplification of genomic DNA samples. There was no association between the DD polymorphism and the presence of renal scarring.Genotype frequencies in group 1 were: II – 29, ID – 56, and DD – 27, and in group 2 were: II –12, ID –52, DD –3O (p=O,21). Neither was evidence supporting a „dominant" D allele.There was no association between the DD genotype and the presence of proteinuria or reduced renal function(p>O,O5).Hypertension was seen more in those individuals with the DD genotype, compared with the other two genotypes (p= O,O12). We cannot confirm previous reports that children with primary VUR who are homozygous for the deletion polymorphism of the ACE gene are more susceptible to renal scarring than heterozygotes and II homozygotes.However,it is possible that in asociation with other genetic polymorphisms,this may contribute to increased susceptibility to scar formation and progressive parenchymal damage.Our preliminary data showing that polymorphisms in the TGF- beta 1 gene may influence individual susceptibility to renal scarring.

Kidney transplantation: risk factors for kidney transplant acute rejection

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PP

Chronic rejection(CR) and death with function are currently the 2 major causes of long-term kidney transplant(tx) failure.Acute rejection(AR) episodes have been shown to be a risk factor for CR (with late AR associated with increased risk v.s. early AR),and decreasing rates of AR have been shown to be associated with decreased CR.We used multivariate analysis to identify risk factors for early(< 6 months) v.s.late (> 6 months) AR episodes for 493 tx recipients since 1972 – 1994.Included in the analysis were: 1) donor factors-donor source, donor age, DGF (yes or no), 2) HLA-ABDR mm, 3) recipient factors - age (<18vs.18-50 vs. >50), gender, CSA level at 2months (our previous analyses showed CSA levels at 2 months correlated with levels at 1 and 3 months), Tx era, and pretx dialysis. When all transplants were analyzed,kidney donor source was not a signifficant risk for early or late AR.For CAD (cadaveric kidney donors), young recipient age, low CSA level, tx era, and HLA mm were signifficant risks (p<0,05). For CAD recipient sex and older donor age were also signifficant. For late AR, the only signifficant risk factor for CAD was 2 month CSA level < 150 (by HPLC). We conclude that the identified risks that can potentially be optimized are the CSA level and HLA match. The remaining risk factors can be used to identify a profile of recipients at „high" vs. „low" risk for AR in order to individualize immunosuppression.

Sirolimus in renal transplanted patients. First observations in Bulgaria

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PP

Sirolimus /Rapamune®/ is a new immunosuppressive drug /tor-inhibitor/, wich is comprable in efficiency with calcineurin inhibitors, but the nephrotoxicity is practicaly not important. During 12 months – 9 renal transplanted patients were treated with Rapamune® / Wyeth/ - 4-7 mg / once daily/ and blood level 8-14 ng/ml, in combination with steroids, MMF and Aza. These 9 patients were swithch from Cyclosporin to Rapamune®, because of biopsy-proven Cyclosporin chronic nephrotoxicity – 5.2 years after renal transplantation. Through the treatment period with Rapamune® renal function was stabil / Ccr/. We had not confermed significantly increase of serum holesterol and decrease of thrombocites count, may be due to small patients population.

Mutation in the MTHFR gene and homocystein levels in uremic patients

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Homocysteine (tHcy), independent risk factor for cardiovascular disease, is normally removed by either transulfuration to cystein or remethylation to methione. Elevated plasma Hcy levels can result from genetic defects of enzymes necessery to Hcy metabolism and acquired vitB12, B6 and folate deficiency in healthy and in uremic patients (pts). The aim of the study was to evaluate the allelic frequency of methylenetetrahydrofolate reductase (MTHFR) mutation (677 C to T) and the relation of the genotype with tHcy, folate and vitB12 serum levels in pts on hemodialysis (HD). The study included 84 pts (57 male, aged 55.3±13 years), maintained by HD (82.25±60.5 month) at our Insti-

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tute. Among them 38% of them were supplemented with usual doses of folate and vit B12 (th). Pts were divided into 4 groups according to presens of gene polimorfism (pfm) and to th: group 1 without pfm and th (24 pts), group 2 with pfm but without th (25 pts), group 3 without gene pmf but with th (11pts) and group 4 with gene pmf and with th (24pts). The mean tHcy levels in HD pts was 27.1±9.0µmol/l vs 13,3±3.3 µmol/l as compared to controls. Determination of gene pmf reveled that 41.7% pts were without MTHFR gene mutation, 45.2% were heterozygous and 13.1% homozygous for MTHFR gene pmf. Four groups differenced, determined by ANOVA, in tHcy levels as well as in folat and vitB12 serum concentration. Group 2 had highest tHcy level and lowest folat and vitB12 serum concentration compared to other groups. In conclusion, having in mind that more than half examined pts had MTHFR gene pmf our study confirmed the importance of supplementation with usual doses of folate and vitB12 in all pts on HD, especially in those with this genetic mutation.

A rare complication of ciprofoxacin treatment: encephalopathy

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PP

Although rare neurological complaints during quinolone use have been reported, a clear relationship has not been established previously. Here we report a patient with an evident encephalopathy seen after IV ciprofloxacin treatment. A 60-year-old fully conscious and well-oriented woman admitted to hospital with complaints of fever, nausea, vomiting, and dysuria. Serum creatinine was 4.5 mg/dL and solitary hydronephrotic kidney with a stone in pelvis was seen in ultrasonography. After a double-J catheter was placed to her left ureter, an increase in urine output was observed. Gram-negative microorganism and abundant leukocytes were seen in Gram stained urine sample and ciprofloxacin was initiated. Although urine output was over 5-liters/ day and serum electrolytes were normal, she developed a progressive deterioration in consciousness after the administration of ciprofloxacin. Klebsiella oxytoca was isolated from urine culture. She had no meningeal irritation findings and local neurological deficit. Computerized tomography of cranium and magnetic resonance imaging of brain were also normal. Electroencephalography (EEG) showed diffuse slow wave activity. Since there was no finding to explain the encephalopathy, use of ciprofloxacin was considered as the cause of the conscious deterioration. Its administration was interrupted and meropenem was started. In the following 24 hours, her consciousness showed progressive improvement. After 48 hours, her consciousness became normal in all aspects. EEG showed normal waves 7 days after the last dose of ciprofloxacin.

Iron status in hemodialysis patients on long-term erythropoietin treatment

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OP

Determination of iron (Fe) requirements in chronic hemodialysis (HD) is difficult and several parameters are used for this purpose. In order to investigate iron (Fe) changes in EPO treated HD patients, we evaluated Fe markers during 16 months in 12 HD patients: M/F=8/4, age 61(50-75) years, HD time 113 (41-233) months, with ferritin (F) values of 436±177 ng/ml, treated only with EPO with target hemoglobin(Hb) values of 11-12 g/dl,without any Fe supplementation. Serum Ferritin decreased at 8 months (321±177 ng/ml, P=0,008) and progressively thereafter down to 232±89 ng/ml, P=0,04. Formula calculated iron reserves (RES) fall was significant at 16 months (2394±178>2143±142 mg, P=0,04). A slow decrease was also noted in MCH (31±1>29±0,7 pg) and MCV (95±5>91±2 ?3). The percentage of hypochromic red cells (HRC) increased, remaining <10%, (2,4±2,3>4,8±3,6 %, P=0,03) and was negatively correlated to MCV and MCH. Reticulocyte Hb content (CHR) showed a slight decrease (31±1>30±1 pg, P= 0,04) and a direct correlation to MCV and MCH. A negative correlation was also found between CHR and HRC. No significant correlation of F and RES to the other markers was found. In conclusion, all studied markers were similarly usefull in the assessment of iron status. They changed very slowly under EPO treatment and without iron supplementation, in this group of stable HD patients, who had been on long-term IV iron previously. This finding questions the necessity of other than serum ferritin levels laboratory methods for the control of iron status in such patients who thus can be treated by EPO alone for quite a long period of time.

The prevalence and the factors having influence on nocturnal enuresis among Turkish children

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PP

The aim of this cross-sectional study is to determine the prevalence and the associated factors of monosymptomatic nocturnal enuresis (MEN) among children in Aydin. This epidemiological study was performed among 1008 primary school children chosen by stratified and randomized sampling methods. Data collected by self- administered ques-

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tionnaire completed by parents. 969 children (50.8% boy and mean age 9,98±3,01 (5-15) years) accepted for the study. Chi- square statistical analysis was performed. The prevalence of MEN was 12.2% and 72% of them were primary. 30.4% of the children were bed-wetting every night and 76% of them were bed-wetting once during a night. 69.6% of the children were not treated professionally. 61% of the treated patients had conditioning therapy. The factors associated with enuresis nocturna were given in the table below.

Parameters	Enuretics(%)	Non-enuretics(%)	<P
Sex Male/Female	16,9/8,8	83,1/91,2	0,01
Sleep pattern Light/Normal/Deep	5,6/56,8/37,6	10,8/78/11,3	0,01
Parasite	24,8	9,4	0,01
Snoring history	30,4	18,1	0,01
Family history	52	4,3	0,01

In addition, waking the child at night to void (p<0.01), parental education level (p<0.01), envying of the siblings, number of individuals living in child's room were statistically associated with reported enuresis nocturna.

The role of urine osmolality and ions in the pathogenesis of primary monosymptomatic enuresis nocturna and in the prediction of responses to the desmopressin and conditioning therapies

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PP

Aim of this study was to determine the role of nocturnal and daytime urine volume, osmolality and ion excretions in the pathogenesis of monosymptomatic enuresis nocturna and in the prediction of responses to the desmopressin and conditioning therapies. The patient group comprised 55 monosymptomatic enuretic children (5-15 years). Patients in group I (n=20) treated with 20 µgr desmopressin given intranasally, patients in group II (n=20) had conditioning therapy. Group III (n=15) had placebo. 15 healthy children with similar age and sex composed the normal control group. Volume, osmolality, excretions of Na, K, Cl and Mg were measured in the daytime and night urine samples in each group before and during the 4th week of the treatment. Mann-Whitney-U, chi-square, Wilcoxon and Kruskal Wallis tests were performed. Responses (full and partial) were 80%, 70%, 26.6% in desmopressin, conditioning and placebo groups, respectively. Night/day urinary osmolality, FeCl, FeK (p=0,029-0,04-0,005) were lower in en?retics than controls. During desmopressin therapy night and day urinary volumes (p=0,000-0,011) were found decreased and urinary osmolality ratio was found increased (p=0,03). During conditioning therapy only night/day urinary volume increased (p=0,010). There was no significant difference between the parameters before and during treatment. No significant differences were found between responders and non responders in each of the three groups. Responders to desmopressin had lower night/day urinary FeNa, FeK and FeCl (p=0,027-0,004-0,044) than the normal controls. Responders to conditioning therapy had lower night/day urinary FeK, FeCl (p=0,023-0,020) and higher FeMg (p=0,023) than the normal controls. There was no difference between the parameters of non-responders and normal controls.

The red blood cell deformability in patients suffering from end stage renal failure on haemodialysis or continuous ambulatory peritoneal dialysis

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PP

Anemia is the main problem for patients suffering from end stage renal disease (ESRD). This study aimed to determine whether the index of rigidity (IR), that shows red blood cells (RBCs) deformability and the possible IR disturbances can provide on explanation about the cause of anemia, in patients with undergoing maintenance haemodialysis (HD) or on peritoneal dialysis. The IR was determined in 39 haemodialyzed patients (Group A), in 32 patients on CAPD (Group B) and un a 17 normal individuals (group C). The RBCs IR was measured twice in group A (before and after the end of a haemodialysis session) and once in groups B and C. The IR was determined by haemorheometry (method of filtration), using special equipment. In group A the IR was increased in comparison to the control group (17,9±6,2 Vs 10,2±1,8, p<0,0001). This increase was even higher in the measurement at the end of the haemodialysis session (p<0,0001). The RBCs IR in CAPD patients was significantly lower than this of HD patients (p<0,0001) and was not statistically different from the control group (p=0,068). It is concluded from the study that: a) in HD patients occur disturbances in the deformability of the RBCs, that are worsened by the haemodialysis session b) the index of rigidity of RBCs is significantly higher in the HD patients than in CAPD patients c) in patients on CAPD the disturbance of deformability of the RBCs was less in comparison to the control group, which however does not reach the statistically significant levels.

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Response of pulse wave velocity and pulse pressure to the isometric muscle exercise in end stage renal disease patient

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PP

Background. Alterations of pulse wave velocity (PWV) in ESRD patients represents a recent field of investigation since it has been correlated to mortality. Modifications of PWV in response to handgrip and thus to the stimulation of autonomic nervous system have not been reported. We studied 39 stable dialysis patients with a mean age of 63±12,5 years and a mean duration on dialysis 52±40 months. PWV was determined from carotid and femoral arterial pulses recorded simultaneously with ECG before and during handgrip. Results were correlated to age, mean blood pressure, lipid profile, coronary disease and the presence of coronary calcification evidenced by spiral computed tomography. Results. Raised values of PWV and pulse pressure (PP) were found in all (mv11.7±4 m/sec and 52±17mmHg respectively). Significant increases in systolic, diastolic blood pressure and mean blood pressure were noted after the handgrip, whereas PWV and PP remained unchanged. Intragroup analysis revealed 21 individuals who significantly raised PWV ($p<0,01$), while in 14, PWV was decreased ($p<0.001$). Triglyceride levels were lower in the latter group ($p<0.05$) and no further difference was noted. Five out of the 7 patients with coronary disease belonged to this latter group. Similar was the behavior of 12 patients with coronary calcification. Conclusions. Disordered function of autonomous nervous system results in disturbed response to handgrip in a substantial fraction of end-stage renal disease (ESRD) patients not affected by age, time on dialysis, and levels of blood pressure. Coronary disease could be major determinant of this behavior in our study, however this demands further evaluation.

Homocysteine in uremia, a cardiovascular risk

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OP

Cardiovascular disease (CVD) is the major cause of death both in the general population and in patients ith end-stage renal disease (ESRD).In particular in hemodialysis (HD) patients, even after stratification by age, gender, race and presence of diabetes, CVD mortality is 10 to 20 times higher than in the general population. The excess risk of CVD is due in part to a higher prevalence of established risk factors. However, unique renal-related risk factors, are likely to contribute to this excess CVD risk. Hyperhomocysteinemia, a well-recognized cardiovascular risk factor, is frequent in ESRD and HD patients. In these cases the plasma total Homocysteine (tHcy) levels are on average at least three times the upper normal limits (13-15 μmol/L in most laboratories), but on an individual basis levels as high as 150 μmol/L have been reported. A defective renal clearance or metabolism of Hcy has been hypothesized on the basis of animal studies, but probably that does not occur in humans. More likely a systemic impairment in whole body Hcy metabolism underlies the physiopathology of hyperhomocysteinemia in uremic patients. This impairment may be related to an inhibitory effect of uremic toxins on enzymes involved in Hcy metabolism especially those involved in the remethylation pathways. Treatment with folic acid or folic acid derivatives is able sometimes to reduce circulating levels of Hcy but usually fails to attain normal values. Treatment with various dialyzers with different flux characteristics have produced contrasting results. HFR-ON LINE (double chamber HDF with reinfusion of regenerated ultrafiltrate) is a novel method which combines the processes of diffusion, convection and adsorbance. The ultrafiltrate is regenerated through a charcoal-resin device. We have investigated the effect of such treatment on Hcy levels in ten patients with a mean Hcy level of 65.4 μmol/L (range 24.1-119.7) . We have measured Hcy, folate and Vit B12 pre and post-dialysis. The same parameters were measured in the ultrafiltrate pre and post cartridge at three time points (1, 120 and 240 min). Mean Hcy levels were 65.4 and 37.6 μmol/L ($p< 0.01$)pre and post dialysis respectively while folate and Vit B12 were unchanged. Pre and post cartridge Hcy levels were 12.4 vs 2.9 ($p<0.01$), 11.3 vs 6.0 ($p< 0.05$) and 8.2 vs 5.2 (NS) μmol/L at the three time points considered while folate and Vit B12 were essentially undetectable. These preliminary data seem to indicate that a) in our patients from central and south Italy a five to tenfold increase of Hcy levels might represent a major risk factor for CVD b) HFR-ON LINE is able to reduce Hcy levels c) HFR-ON LINE is able to reduce Hcy levels not only through a likely reduction of uremic toxins but also through an actual removal of Hcy by adsorbance onto the charcoal-resin cartridge.

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Pulmonary-renal syndrome in patients with ANCA (+) vasculitis: an eleven-year single center experience

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OP

We retrospectively analyzed the data of 22 patients (19M) aged 55 (28-76) years, with pulmonary-renal syndrome (PRS) and ANCA (+) vasculitis, who were hospitalized from 1992 to 2002 in our Hospital and in whom a renal biopsy was performed. 13/22 patients had PR3+ ANCA and 9/22 MPO+ ANCA. Mean serum creatinine (scr) at the time of diagnosis was 6.6±4.4mg/dl (M±SD) and proteinuria 1.6±1.4 g/24hr (M±SD). At the end of the first month of treatment (corticosteroids and cyclophosphamide), renal function improved in 12/22, 54.5% (scr, from 8.5±4.5 mg/dl to 4.3±2.3 mg/dl, p=0.001) remaining stable thereafter, and deteriorated in 9/22, 41%, (scr, from 4.1±3 mg/dl to 6.5±2.9 mg/dl, p=0.03) while one patient died. At the end of the study period (mean, 4.4±3.3 yrs), 11/22 patients had died, 8 from respiratory failure, 3/22 (13.6%) reached ESRD, 5/22 (36.4%) remained stable with impaired renal function and only 3/22 (13.6%) improved, achieving almost normal renal function. Main differences between PR3 and MPO positive patients were the chest CT findings (bilateral nodules in PR3+ and 'ground glass' or fibrosis in MPO+ patients) and the rate of renal function improvement after initiation of treatment (rapid decline of scr in PR3+ patients). We concluded that, pulmonary-renal syndrome with (+) ANCA is associated with increased mortality. If renal function improves during the 1st month of treatment it is usually remains stable thereafter. The presence of PR3 ANCA was associated with an early response to treatment.

ACE I/D and ATR1 A1166C gene polymorphisms and diabetic nephropathy in children. Prospective study

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OP

Background: Polymorphism of the genes of renin-angiotensin system might be involved in genetic predisposition of development of diabetic nephropathy and its progression. The aim of this prospective study is to estimate the possible markers for selection of children with insulin-dependent diabetes mellitus (IDDM) under the highest risk for development of end stage renal disease as a key for early treatment with renoprotective agents. Patients and methods: ACE I/D and ATR1 A1166C genes polymorphism were determined in 48 children of puberty age and 5 or more years of IDDM. Eight of them developed diabetic nephropathy. Sample of 198 healthy persons served as control. Genomic DNA was isolated by proteinase K/phenol extraction method and amplified by polymerase chain reaction. Results: Distribution of II, ID and DD ACE genotypes in IDDM children patients without nephropathy was 10,4%, 58,3% and 31,3%, respectively and in those who developed nephropathy 12,5%, 37,5% and 50,0%, respectively. ACE genotype distribution was significantly different between IDDM children with and without nephropathy ($p<0.05$). Frequencies for ATR1 genotypes were not statistically different neither between two groups of patients or compared to controls. Conclusion: Further follow up of these IDDM children with and without nephrophaty with addition of new patients could clarify significance of ACE and ATR1 genes polymorphism on development and/or progression of diabetic nephropathy.

Patients on hemodialysis with high flux membranes need even higher doses of active D3 metabolites

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PP

The increase of parathyroid hormone (PTH) with patients on chronically standard acetate hemodialys (AHD) with Low-Flux membranes (cuprophan/polysulphon) appears between five and ten year's treatment. This increase is two or three times higher in comparison with normal values and it is directly connected with dose and regular Th metabolites D3. Passing to a standard bicarbonate hemodialysis (BHD) the same PTH increase is registered already at the end of the second year treatment, but using High Flux membranes already in the first months and it continues, by arithmetic progression, in following months (PTH from 406-1590 ng/L) if a patient is without Th metabolites D3 and it is in accordance with echo parathyroid glands (PTG) picture and Rtg osteodystrophy picture. We examined potential inhibitional active metabolites D3 - 1,5 (OH) 2D3 (Rocaltrol) and 1 alpha OHD3 (Eins Alpha) effects on the PTH value increase on 25 hemodialytic patients (15 male, 34-60 of age, 12-15 hours per week BHD with Low-Flux and High Flux membranes). Serum calcium phosphorous, alkali phosphatase and reserve, albumin, PTH were often controlled. 12 weeks after Th Rocaltrol* 0, 25-0,75 mcg oral per day and Eins Alpha* 1-3 mcg boluses on HD three times a week is important decrease of PTH (mean 675 g/L). Hy-

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perphosphatemia is avoided by adjusting the calcium carbonate dose and by diet. Hypercalcaemia was not registered in spite of the additional Th Ca Sandoz 1 g per os together with Rocaltrol* and Ca C12 10% 10 ml on HD with boluses Eins Alpha*. Control echo PTG showed withdrawing of PTG hiperplasia and/or same dimension or small decreasing PTG adenoma. Control osteodensitometria is in progres. Patients on hemodialysis with High Flux membranes need even higher dose of active metabolits D3. By adequate continuing doses of active metabolites D3, it is possible to stop the PTH increase and to avoid intocsication, irreversibile changes, operating treatment in late phase of secondary hyperparatiroidism.

Treatment of cyclophosphamid resistant lupus nephritis using cyclosporine. Our experience

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PP

Systemic lupus erythematosus (SLE) is a chronic autoimmune inflammatory disease of unknow cause which can affect the skin, joints, kidneys, lungs, nervous system, serous membranes and/or other organs of the body. Standard immunosuppressive regimens for SLE (pulses of cortocosteroids and cyclophosphamide) can be associated with substantial side-effects and in some patients may not be effective. The aim of this study is to present our experience in treatment resistant lupus nephritis using by cyclosporine including lower doses corticosteroids. We studied 22 female patients with persistent nephrotic syndrome, average 33 years old, whom had previosly received courses of cyclophosphamide therapy without controlled disease activity. All patients received cyclosporine at an initial dose of 3-5mg/kg per day (aiming serum concetration is 100-120 ng/ml) including prednisolone 15-20mg per day. Renal function was damaged in different degree. Renal biopsies showed WHO class V lupus nephritis in ten patients, class IV in eight patients and class III in four patients. The average follow-up is 3 years, and the efficasy of this therapy was evaluated by changes in protein excretion in 24h, renal function, and arterial hypertension. The efficasy of therapy was rated in 3 levels: complete remission (protein excretion<0,5 g/24h, creatinin clearence>80 ml/min and normal blood pressure), partial remission (protein excretion<3,5 g/24h, creatinin clearence 80 ml/min and normal blood pressure) and, finaly, terminal renal failure. Complete remission was achieved in all patients with histopathological type V lupus nephritis during the 2-18 months (mostly 2- 6 months) - 45%, partial remission was noted in 7 of 8 patients with type IV lupus nephritis and in all with type III nephritis during the same period – 50%, while only one patient with type IV lupus nephritis was finished with terminal renal failure - 5%. No side effects was noted. Conclusion: Cyclosporine including lower doses corticosteroids appears to be safe and effective alternative immunosuppresant for renal disease in SLE not responding to conventional immunosuppressive tratment. Particularly it's effect in treatment of membranous lupus nephritis. Good initial results in treatment of nephrotic syndrome encourage for its widely further using.

Is ureaplasma urealyticum a significant pathogen in nephrology?

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PP

Ureaplasma urealyticum, one of the smallest free-living bacteria, colonizes the urogenital tract in as many as 50% of sexually active adults. This bacterium can elicit a spectrum of maladies, such as various arthritides, nongonococcal urethritis, prostatitis, cervicitis, infertility, lower and upper urinary tract infections and infectious stones. This study was performed to elucidate the possibile role of Ureaplasma in urinary infections and stone formation. Among 585 outpatients (pts) with sexually transmitted infections caused by Chlamydia trachomatis and/or Ureaplasma urealyticum, we choosed 220pts with Ureaplasma infection alone, female 159 and male 6l, aged 19-67years. Urethral swab for Ureaplasma was positive in all pts, urine culture for Ureaplasma positive in 103 pts, urine culture for common bacteria positive in l6pts (mostly E.coli), PCR for Mycobacterium tuberculosis in urine positive in 16pts (suggesting renal tuberculosis). Urinalysis showed mostly pyuria, less microhaematuria and normal urinary sediment in one fourth. We diagnosed nephrolithiasis in 77 pts (35%), urethritis in all pts, cystitis in 99 pts (45%) and chronic pyelonephritis in only 4 pts (1,8%), in the absence of other uropathogens except Ureaplasma. We excluded those patients with renal tuberculosis and common urinary infections. By eradication of Ureaplasma infection, we reduced stone growth. Involving in lower and upper urinary tract infections, as well as infectious stones, Ureaplasma urealyticum seems to be a significant pathogen in nephrology.

Prevalence of cardiovascular disease and influence of different cardiovascular risk factors on the number of cardiovascular complications and survival

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PP

Cardiovascular disease are the main cause of morbidity and

mortality in patients on renal replacement therapy. About half the deaths in this group of patients are attributed to cardiovascular disease. The goal of study was to evaluate the prevalence and clinic characteristics of the cardiovascular complications and their influence to the survival and the influence of different cardiovascular risk factors to the number of cardiovascular complications. We analyzed cardiovascular complications in 41 patients on the renal replacement therapy during the period from 1996 to 2002. The most frequent were hypertension /95%/, arrhythmias /53%/, ischemic heart disease /51%/,heart failure /42%/, left ventricular hypertrophy/41%/, hypotension /45%/, pericarditis /24%/ and metastatic calcifications /29%/.Multivariate analysis showed that age, level of hemoglobin and albumin, index Kt/V and the duration of haemodialysis have dominant influence on the number of cardiovascular complications. Logistic regression showed that the cardiac failure had dominant influence on the survival among other complications. Prevention, early detection and management of heart disease should be needed, particular early detection and correction of hypertension, left ventricular hypertrophy and malnutrition should be high priorities in these group of patients.

A population-specific formula predicting creatinine excretion in children on chronic peritoneal dialysis

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OP

Introduction: The creatinine excretion (CrEx) is considered as a reliable index of lean body mass. The purpose of this study was to develop and test a formula to calculate predicted CrEx in children on chronic peritoneal dialysis (CPD). Materials and methods: Creatinine excretion data were measured in 145 24-hour urine and dialysate collections from 22 children on CPD (aged 7.0 +/- 4.3 years; male/female: 12/10). The CrEx ratio was calculated by dividing the patients measured CrEx (M CrEx) by the predicted CrEx (P CrEx). The formula predicting P CrEx was derived by surface area (SA in m2), height (Ht in cm) and serum creatinine (S.Cr in mg/dl) by linear regression. Results: There was a positive correlation ($r=0.57$, $p<0.001$) between M CrEx and P CrEx calculated by the equation: P CrEx (mg/kg/day) = (0.261 x S.Cr) + (0.047 x Ht) + 11. The positive and the negative predictive values of this equation were respectively 78% and 82%. The M CrEx was 17.5 +/- 2.8 mg/kg/day and CrEx ratio ranged from 0.67 to 1.36 (1.01 +/- 0.13). A significant positive correlation was found between P CrEx and percentage of ideal body weight. There was no correlation of CrEx ratio and age or height or surface area. Conclusions: An equation for the calculation of P CrEx was derived from data of routinely measured creatinine clearances. Using this formula CrEx ratio can be easily calculated and changes of lean body mass can be estimated. However this formula is population-specific and needs to be confirmed in other centers.

Hepatitis E virus antibodies in haemodialysis patients: epidemiological survey in Thessalia (central Greece)

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OP

Aim: Hepatitis E virus (HEV) is the causative agent for enteric non-A, non-B hepatitis. Transmission is via the faecal route but the possibility of transmission by blood has been raised. Studies concerning anti-HEV prevalence among haemodialysis (HD) patients are very few and give conflicting results. Methods: We tested all patients (n=370) attending in the HD units of central Greece (n=5) for anti-HEV antibody. A specific solid-phase enzyme-linked immunoassay (Abbott HEV EIA) was used. Results: Anti-HEV prevalence was 4.5% (n=17), varying from 1.8-9.4% in the various HD units. Prevalence of HBsAg and anti-HCV was 5.4% (1.4-15%) and 23.8% (10.9-37.5%) respectively. The anti-HEV prevalence was increased compared to blood donors in Greece (0,23%, $p < 0.01$). The highest prevalence of anti-HEV was revealed at the HD unit of the General Hospital of Karditsa (9.4%). Risk factors for anti-HEV antibody were not identified: no association was found between anti-HEV positivity and age or sex, duration of HD, hepatitis B or C virus infection markers, history of hepatitis or history of transfusion. Conclusions: This is one of the first reports concerning seroepidemiology of HEV infection in a large cohort of HD patients. The prevalence of anti-HEV in the HD units in central Greece was relative high. The high prevalence of anti-HEV found in the HD unit in Karditsa is probably related to a local infection. However still-undefined intra-unit factor may be associated with HEV transmission.

Kidney disease as a first manifestation of multiple myeloma

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PP

Several glomerular and tubulointerstitial disorders may occur in association with plasma cell dyscrasias. In this study, we evaluated the patients (pts) who were hospitalized at our clinic during last three years to examine origin of some nephrology disorders. Retrospective analysis revealed 10 pts (mean age 59.1 ± 10.4, 5 male) with clinical and biochemical signs of renal disease and multiple myeloma as a final

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diagnosis. Elevated serum creatinine concentration was recorded in 6 pts, and 4 pts had combination of elevated serum creatinine concentration and nephritic proteinuria as a cause of nephroplogy chacking. All pts had severe anaemia with haemoglobin level under 0.9g/dl. Elevated serum total protein and hypercalcaemia were recorded in 2 pts respectively. Positive serum and/or urine M component had 6 pts. Bence Jones proteinuria has been present in 3 pts, and urine examination revealed haematuria in 3 pts. Lytic bone lesion was recorded in 7 pts. Renal biopsy was performed in 2 pts, and patohistological examination revealed lesion characteristic for myeloma kidney. After bone marrow examination, plasmacytosis (> 10%) were found in all pts. It may be concluded that some patients with multiple myeloma have renal insufficiency and anemia as a firs manifestation of underlining disease. After haematology treatment they are still alive and have stable renal insufficiency.

Obesity as risk factor in survival of patients on hemodialysis

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OP

Malnutrition is well known risk factor for survival in long-term hemodialysis patients. Is obesity risk factor for survival of these patients? In 7-year prospective cohort study of 94 hemodialysis patients, body weight, height, mid-arm circumference, triceps, biceps, subscapular and suprailiac skin folds were measured together with transferin and albumin every winter season in order to assess risk for survival. The obtained data were used to calculate mid-arm muscle circumference, BMI and percent of body fat as in NCDS had been done. The results showed that 32/94 (34%) were malnourished, 41/94 (44%) were obese and 21/94 (22%) were normal. A total of 52/94 (55%) patients died after 7 years. As for the group of malnourished patients, 13/32 (40.6%) died, while in the group of obese patients, 30/41 (73.2%) patients died while in normal group, death occurred in 9/21 (42.8%) cases There was significant negative correlation between survival time and percent of fat ($r=-0.252$; $p<0.014$). Cox proportional hazard model (stepwise) revealed obesity as risk factor, as well as hypertension, serum albumin and calcium. Our results suggest that obesity is a risk factor in hemodialysis patients.

A four-year period overview of moderate to severe acute renal failure in nephrology department: report of 80 cases from a single center

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OP

Acute renal failure (ARF) is a syndrome with a high mortality rate even today. We believe that the outcome of ARF is a matter of data presentation, since most of the reported studies include patients with ARF who have a variable degree of severity and in whom the condition is caused by many different factors. Aim of the Study: To assess the outcome of ARF concerning patients with ARF who are treated exclusively in the medical ward (Nephrology Department).Material and Method: We studied prospectively 80 adult patients (47 female and 33 male); ages 15 to 78 years old (median age 43.3 ±19.28), with ARF who were treated in Nephrology Department during a four-year period (1998-2002). Diagnosis of ARF was based on complete medical history, physical examination, laboratory findings, renal sonogram and clinical course. Patients with ARF due to obstructive uropathy and postoperative were excluded from the final analysis. Results: The major causes of ARF in our patients resulted as follow: prolonged volume depletion 39 cases (48.75%), nephrotoxicity (mainly due to antibiotics) 22 cases (27.5%), rhabdomyolysis 7 cases (8.7%), other causes 15%. Four of the 80 pts. who had obstructive uropathy were excluded from the final analysis. Among the remaining 76 pts., 57 (75%) were non-oliguric and 19 pts. (25%) were oliguric and underwent dialysis therapy. Hyperkalemia and the peak plasma creatinin levels were significantly higher in the oliguric pts., respectively $p< 0.05$ and $p< 0.01$. The overall mortality rate among the 76 pts. was 3.9% (3/76). The mortality rate in dialysis dependent group was 15.8% (3/19). Conclusion: The major causes of ARF in pts. treated exclusively in the medical ward were prolonged volume depletion and nephrotoxicity. The mortality rate of ARF was particularly low. The need for dialysis has been pointed to be a significant risk factor related to fatal outcome of ARF.

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The association of tuberculosis in patients on hemodialysis and after kidney transplantation

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OP

The incidence of tuberculosis in the general population depends on many factors, including socioeconomic one. During the last few years the tuberculosis rate in Moldova increased significantly. In comparison with 1990 the incidence increased with 30,1% in 2000 and with 98% in 2001. A retrospective review was undertaken to elucidate the correlation between the tuberculosis incidence in the patients on hemodialysis and after kidney transplantation during 20 years (1982-2002) and the epidemiological data from the general population. The patients were divided in two groups: 1st group – 1000 patients on hemodialysis and the 2nd group – 260 patients after kidney transplant. We analyzed the length of the hemodialysis treatment and immunosuppression therapy, clinical forms, the time of tuberculosis association, dividing them in 2 period of time: 1st period – 1982-1999, 2nd period – 2000-2002. A total number of 25 patients were diagnosed during this period of time, including 12 treated with hemodialysis (7 male and 5 female), and 13 after kidney transplantation (10 male and 3 female). The association of tuberculosis in patients on hemodialysis was among 6 months and 11 years, when after kidney transplantation between 2 months and 10 years. The incidence of tuberculosis during this 20 years was 1,2% (12 from 1000) in patients on hemodialysis and 5% (13 from 260) in patients after kidney transplantation. In the 1st period 1982-1999 the total number of the patients affected by tuberculosis were 13 or 1,1% (10 after kidney transplantation and 3 on hemodialysis), in the 2nd period 2000-2002 12 patients or 10,3% (3 after kidney transplantation and 9 on hemodialysis) were diagnosed with tuberculosis. In patients after kidney transplantation the most frequent clinical forms were the pulmonary one (infiltrative, disseminated, pleurisies, bronchadenitis) and in the patients on hemodialysis – extra pulmonary, predominantly osteoarthritis. Our data suggests that there are direct correlations between the incidences of tuberculosis in the general population and increased incidence among immunocompromized individuals, first of all patients on hemodialysis.

Unilateral polycystic kidney disease

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PP

Unilateral polycystic kidney disease is a rare manifestation of ADPKD in children. In this work we report a child who presented as unilateral cystic disease with negative family history. A 13-year old female was referred for surgery under suspicion for echinococcosis and was subjected to right lumbotomy. Operative finding excluded the previous diagnosis; only the largest cyst, which measured 30mm in diameter, was incised. An ultrasound scan after the surgery revealed several cysts in the right kidney, the greatest one measured 10 mm. The kidneys had normal dimension for the age and height and normal echogenicity. Careful scanning of the left kidney did not demonstrate presence of cysts. Overall the appearance on the US was very typical for ADPKD on the right kidney, but on the left kidney there were no evidence for cysts. The blood pressure and creatinine clearance were normal. The physical examination did not show any abnormal finding. The family history was negative for cystic or other kidney diseases. The first-degree relatives mother, father and brother underwent kidney scanning without evidence for cystic disease. Tuberous sclerosis and von Hippel Lindau disease may initially be unilateral in children. Caution should be paid to localized cystic neoplasms. Familiarity with localized cystic disease of the kidney, proper imaging studies and follow up are mandatory for each patient to avoid unnecessary surgery.

Autosomal dominant polycystic kidney disease and a family history of intracranial aneurysm

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PP

Subarachnoid haemorrhage is a common cause of death in patients with autosomal dominant polycystic kidney disease (ADPKD), as a consequence of ruptured aneurysm. In case of an association with ADPKD, first-degree relatives should have a kidney and abdomen ultrasound examination and in those with positive finding a magnetic resonance angiography (MR) of the intracranial vessels should be performed. In this work we present the results of the screening of the siblings whose mother died due to ruptured cerebral aneurysm. Three siblings were referred for ultrasound screening for ADPKD after death of their 42-year old mother. There were two males old 17 and 11 years and a female sibling aged 14 years. The renal US revealed bilateral polycystic disease in both male siblings. Their renal function and blood pressure were normal. The female sibling had not cysts on renal US. A MR angiography was performed in the 17-year old sibling but there was no evidence for intracranial aneurysm. In conclusion: The prevalence of intracranial aneurysms in ADPKD patients is estimated about 10%. ADPKD patients with familial history of a subarachnoid haemorrhage should be informed about the need of strict blood

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pressure control and screening by MR angiography. Since aneurysms develop in the course of life, screening for aneurysms is mandatory after the age of 20 year and should be repeated every 1-2 year.

Psychiatric disorders and large interdialytic weight gain in patients on chronic hemodialysis

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PP

Depression and other psychiatric disorders could influence compliance and patient perceptions, including assessment of quality of life. The possible interrelationships between psychiatric disorders and large interdialytic weight gain in patients on hemodialysis have not received much attention. In this study the potential association of psychiatric disorders with compliance of fluid restriction and nutritional status was investigated in patients on chronic hemodialysis. The study population included 40 chronic renal failure patients (female 15/ male 25). Hamilton Depression Rating Scale, Hamilton Anxiety Rating Scale and Primary Care Evaluation of Mental Disorders (PRIME-MD), The Mini Mental State Examination and were used for patient assessment. Interdialytic weight gain % (idwg) and nutritional status were used as an index of diet compliance. Nutrition was assessed using subjective global assessment, serum albumin, predialysis phosphorus and potassium levels. A diagnosis of a depressive or anxiety or somatoform disorder by the PRIME MD was made in 65% of the patients. Fourteen (35%) of the patients had depressive disorder, 32.5% somatoform disorder, 30% anxiety disorder. We found no relationship between any psychiatric disorder, and age, sex, duration of dialysis therapy, education, marital status, employment, socioeconomic status, hemoglobine, serum albumin, phosphorus, calcium, BUN, creatinine, kt/v, npcr, SGA ($p>0.05$). In the patients with depression or somatoform disorder idwg % was significantly higher than those of the patients without these disorders ($p<0.05$). Depressive symptoms may be important determinant of patients' large idwg . Evaluation of psychiatric status should be part of the care of hemodialysis patients.

CRP and depression in patients on chronic dialysis

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PP

Depression is common among patients on chronic hemodialysis (HD). C reactive protein (CRP) is 5 to 10 fold higher in HD patients than in healthy controls. It was reported that depression and exhaustion are associated with inflammation in persons aged >65 years and in patients with rheumatoid arthritis. We investigated the relationship of depression and inflammation in HD patients. The study population included 30 HD patients (the mean age: 49.8+18.3 years, the duration of dialysis :13.4±19.1 months). Hamilton Depression Scale, and Primary Care Evaluation of Mental Disorders (PRIME MD) were used for patient assessment. All parameters investigated were abstracted from medical records for the month in which the patient was interviewed and for the 2 preceding months, and a mean value was calculated for this 3 month interval. Fourteen (46.6%) of the patients were diagnosed with depressive disorder, and 9 of 14 patients were major depression, 2 minor depression, 3 disthymic disorder, 2 recurrent depression. We found no relationship between depression, and age, sex, duration of dialysis, education, marital status, employement, socioeconomic status, hemoglobine, phosphorus, calcium, parathyroid hormone, KT/V, nPCR, urea reduction rate. There was no relationship between CRP, ESR, serum albumin rate, ferritin, fibrinogen and depression ($p>0.05$). Fatigue and other depressive symptoms are often observed in inflammatory diseases. However, we did not find any correlation with depression and inflammation in HD patients. Prospective analyses with repeated assessments of depression and inflammatory markers are needed to further disentangle the relation between depressive symptoms and inflammation in dialysis patients.

Obesity and hyperhomocysteinemia after kidney transplantation

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OP

Obesity and hyperhomocysteinemia are very frequently found after kidney transplantation (Tx). They may independently represent a risk factor for development of atherosclerosis and chronic allograft nephropathy.
In a prospective metabolic study we monitored, for a period of 24 months, a total of 118 obese transplant patients (BMI 30 kg/m2) with hyperhomocysteinemia. We compared the findings of a new regimen of treatment at one year (start of the study) and two years after renal transplantation. Based on a Subjective Global Assessment Scoring Sheet, we started at the end of first year with an individualized hypoenergic-hypolipidemic diet (IHHD). Subsequently, after corticoid withdrawal, IHHD was regularly supplemented with orlistat at a dose of up to 3 x 120 mg/day, statins (pravastatin 10-40 mg), folic acid 5 mg/day, and vit B6 50

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mg/day and followed up for up to 2 yrs. All patients were on CyA and MMF regimen. During the study period, there was a significant decrease in BMI ($p<0.025$) and tHcy level ($p<0.001$). Long-term therapy was associated with a significant decrease in serum leptin ($p<0.001$) and lipid metabolism parameters ($p<0.01$). The mean values of serum folate and vit. B6 also increased significantly ($p<0.01$), creatinine clearance, mean blood pressure, proteinuria, Lp(a) and apoE isoforms did not differ significantly. Based on our results, we assume that obesity and hyperhomocysteinemia after renal transplantation can be treated effectively by modified immunosuppression (corticosteroid withdrawal), long-term diet (IHHD), folic acid and vit B6 supplementation, drugs suppressing digestion or absorption to reduce atherosclerotic, and chronic allograft nephropathy processes.

Renal involvement in lymphoproliferative disorders: clinical and morfological presentation in 48 autopsy cases

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PP

In order to characterize the clinical and morphological features of renal involvement in lymphoproliferative disorders we reviewed 48 autopsy cases- 16 chronic lymphocytic leukemia, 10 multiple myeloma (MM), 6 follicular lymphoma, 6 diffuse large B-cell lymphoma, 4 acute lymphoblastic leukemia, 2 malignant histiocytosis, one mantle cell lymphoma, one Burkitt's-like lymphoma, one hairy cell leukemia and one lymphoplasmacytic lymphoma. Renal failure was presented in about one third (15/48), but only in 6/15 cases was associated with lymphomatous infiltration. Renal microscopic lymphomatous infiltration was seen in 15/48 cases, but grossly just in 5/48 cases. Myeloma nephrosis was seen in 5/10 MM, but renal interstitial infiltrates of plasma cells were absent in all MM.

Does reduced renal function influence systemic caffeine clearance?

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PP

Objectives: To explore the influence of renal failure on systemic caffeine clearance as part of a phenotyping CYP1A2 activity study based on sparse data. Design and participants: Nonblind, single dose clinical investigation. Thirty four non-related adult Bulgarian Caucasians with normal and reduced renal function, 18 women and 16 men, between 18 and 62 years. Methods: Each participant received 3 mg.kg-1 p.o. caffeine. Two blood samples per individual were taken according to the protocol for measuring caffeine plasma concentrations. A total of 67 measured concentrations were used to obtain the nonparametric expectation maximization (NPEM) method estimates of caffeine clearance. Results: NPEM median estimates of caffeine absorption and elimination rate constants, KA=4.54 h-1 and KEL=0.139 h-1, as well as of fractional volume of distribution and plasma clearance, VS1=0.58 L.kg-1 and CLS1=0.057 L.h-1.kg-1 agreed well with reported values from more "data rich" studies. The Mann Whitney test revealed no significant between group differences of CLS1 medians for subjects with normal versus reduced renal function. The particular median for the subjects group with decreased creatinine clearance was 0.1025 (0.0025; 0.2477) L.h-1.kg-1 (n=7) as compared to 0.0483 (0.0076; 0.2725) L.h-1.kg-1 (n=27) for the group of participants with normal renal function (U=73, p=0.371). Conclusions: The lack of effect of both, reduced creatinine clearance and gender, on caffeine plasma clearance was consistent with the data of Ullrich et al. (1992). Collectively, the results show that the NPEM method is a suitable and relevant one for population phenotyping studies of CYP1A2 activity based on sparse caffeine data.

Arterial hypertension in chronic renal disease

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PP

Arterial hypertension (AH) is defined as systolic or diastolic blood pressure $\geq$ 140 or $\geq$ 90mmHg respectively. The prevalence of AH in CRD is approximately 60% - 100%, depending on target population, cause of renal disease and level of renal function. There are different mechanisms involved in the pathogenesis of AH in CRD like: volume overload. sodium retention, renin - angiotensin system, activity of the sympatic system, endothelin system etc. Control of AH is difficult in all target populations with CRD. The presence of AH is associated with cardiovascular disease (CVD). The preferred therapy is control of extracelular fluid (ECF) volume and maintenance of dry weight through dietary salt reduction in all target populations, diuretics and reduction in fluid intake and ultrafiltration in hemodialysis and peritoneal dialysis. Antihypertensive agents may be necessary in addition to control ECF volume. In hemodialysis and peritoneal dialysis the optimal blood pressure is less than 120/80 mmHg, and the target for antihypertensive therapy should be less than 140/90mmHg. In hemodialysis is not yet determined the appropriate time and technique to monitor the blood pressure for antihypertensive drug efficiency but the predialytic measurement is more reasonable. Low blood pressure either in absence or as an response to antihypertensive therapy may be a sign of underlying CVD and the patients should be evaluated for the presence of

CVD.

Ultrasonographic evaluation of asymptomatic atherosclerosis in dialysis patients

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PP

Atherosclerotic cardiovascular diseases are the frequent finding among dialysis population and a number of risk factors, traditional and specific, were proposed to be of influence. Once when diagnosis is established, a disease is usually in advanced stage. The aim of this cross-sectional study was to evaluate prevalence of asymptomatic aterosclerosis and to determine the most reliable early diagnostic marker. 43 stable uremic patients (27M and 16F, mean age 57.7+12.7 years) were included into study and the results were compared with 21 age and gender matched healthy controls. Intima media thickness (IMT), lumen diameter (LD) and cross-section area of intima media (cIM area =3.14 [(lumen diameter/2 + intima-media thickness)2 – (lumen dimeter/2)2]) of the main carotid artery were determined by high resolution B-mode ultrasonography. All patients with evident vascular disease had abnormal cIM area, IMT but LD in 92.3%. In asymptomatic patients, cIM area was elevated in 63.3%, IMT in 50% and LD in 86.7%. Significant correlation was confirmed between cIM area and IMT ($p<0.001$), and LD ($p<0.001$) and the presence of the plaques ($p=0.028$), In addition, cIM area significantly correlated with dialysis duration, age, DBP, albumin level, fibrinogen and CRP (Pearson's test). Calculated cIM area were influenced by CRP ($r=0.619$, $p<0.001$), age ($R=0.704$, $p=0.005$) and smoking ($R=0.742$, $p=0.039$). Age, albumin level, serum fibrinogen and CRP were related to elevated cIM area by univariate logistic regression analysis ($p<0.05$). Independent predictors of elevated cIM area were age ($p=0.043$) and CRP ($p=0.009$) (multivariate logistic regression). In conclusion, cIM area is one sensitive and early marker of asymptomatic atherosclerosis in dialysis patients that highly correlate with parameters of malnutrition and inflammation.

MIA syndrome in patients on regular hemodialysis

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PP

Atherosclerotic cardiovascular diseases are the major reason for increased Mb and Mt of dialysis patients. At the same time, it has been confirmed that malnutrition contributes to CV Mb as well as chronic inflammation all being the part of the MIA syndrome. The aim of this cross sectional study was to evaluate relationship between malnutrition (SGA, anthropometrical and biochemical parameters, TBF, LBM, BMI), inflammation (CRP, fibrinogen, Ly and ESR) and atherosclerosis (cross section area of intima media-cIM area, presence of plaques) in 43 stable patients on chronic HD and compare the results with 21 healthy controls. In comparison to healthy controls, HD patients had significantly higher cIM area (19.2+4.8 vs. 15.0+4.3, $p=0.001$) and more frequent carotid plaques (83.7% vs. 52.4%, $p=0.007$). According to SGA, malnutrition was present in 46.5% of patients and it highly correlated with laboratory and anthropometrical parameters. Elevated CRP (>10 mg/l) was registered in 58.1% of patients with significant differences between malnourished and non-malnourished patients (25.3 vs. 9.92 mg/l, $p=0.000$). Malnourished patients had evident AVD more frequently ($p<0.05$). Patients with carotid plaques were significantly older and had higher cIM area and CRP. Higher cIM area was associated with elevated CRP level ($p=0.0004$), advanced age ($p=0.004$) and smoking habits ($p=0.039$). Univariate logistic regression revealed that malnutrition significantly correlates with BMI, LBM, albumins, creatinin, HDL, LDL, fibrinogen and CRP. Carotid plaques were influenced by age, cIM area, and CRP. Multivariate logistic regression analysis revealed that BMI was independent predictor of malnutrition and age of carotid plaques.
In conclusion, Inflammation was registered in 37.1%, carotid plaques in 55.8% and concomitant finding in 34.9% of malnourished HD patient. Elevated CRP is significant risk factor for elevated cIM area but not for the presence of the carotid plaques that probably depend of some additional pathogenetic mechanisms.

Cystic disease of the renal sinus: twenty years later. Do we recognize it well yet?

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PP

The results of a prospective study, performed on 100 patients with cystic disease of the renal sinus (CDRS) from January 1990 to May 2003 were summarized. CDRS was found in 1,7% among the hospitalized patients in the Clinic of nephrology. The females were predominantly affected (m:f=1:3), mainly aged over 50 years (average age 62,3±8,7 years). The localization of cysts was bilateral in 65% and unilateral - in the remaining 35%; the left kidney was affected in 80% among the latter. Chronic pyelonephritis was established in 26% of the patients with CRDS, nephrolithiasis - in 30% and other nephropathy - in 15%. The renal function was not altered in most patients - average serum creatinine was 96,2±20,8 mcmol/l and average creatinine clearance - 77,3±36,5 ml/min. Only 4% of the patients had serum creatinine > 135 mcmol/l; creatinine clearance < 50

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ml/min was present in 24% of them. Echographic diagnosis was CDRS in only 41% and on the computer tomography - in 50%. Although CDRS was first described 20 years ago, it is not well recognized by the imaging method's specialists yet and they make a right diagnosis only in 50% approximately. The nephrologist's assessment is of crucial importance for the precise diagnosing of this benign disease.

Temporary vascular access: analysis of the complications

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PP

A prospective analysis of 348 central ven catheterizations in 255 patients who underwent extracorporal purification methods from 01.09.1999 to 31.12.2002 was carried out. The average age of the patients was 51,3±16,2 years, 61,2% of them suffered from chronic renal failure. The average catheter indwelling was 15,7±19,1 days. The site of the catheterisation was v. femoralis in 70,6%, v. jugularis int. – in 21,6% and v. subclavia – in 7,8%. Double lumen catheters were used in 75,9%, single lumen one – in 24,1%. Early complications, related to the catheter insertion were observed in 24,7%: unsuccessful catheterization – 7,5%, arterial puncture without clinical consequences – 6,9%, hemorrhage and/or hematoma – 7,2%, and others – 3,2%. Late complications were established in 41,2%: thrombotic – 24,7% and infectious – 15,8%. Microbiologcal control of the removed catheters was performed in 35,1%. Catheter bacterial colonization was revealed in 49,0% and concomitant bacteriaemia was established in 14,3%. S. epidermidis was found to be the most frequent colonizing microorganism. It was isolated in 52,1% from the catheters and in 48,7% from the skin area around the insertion site. Catheter-related bacteriaemia was mainly caused by S. aureus – in 54,1%. The average catheter indwelling of the colonized catheters was 25,5±19,5 days an of the non-colonized – 20,0±14,7 days /p>0,05/. A skilful technique of central veins catheterization by Seldinger's method and good knowledge of the early and late catheter-related complications lead to their successful prevention and treatment.

Aortic aneurysm and autosomal dominant polycystic kidney disease

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PP

An object of this paper is a case of a man, Caucasian, suffering from ADPKD. The renal disease was diagnosed at age of 52, using abdominal sonography and computer tomography. The aortic aneurism was successfully treated by vascular syrgery operation. Despite many different abnormalities, the association between aortic aneurisms and ADPKD has been described exclusively rare. The incidence of AA in the population of ADPKD patients varies widely - between 0 and 15%. Thus the question about the incidence of AA among ADPKD patients as compared with its incidence in the common population remains open. Only 8 cases of AA and ADPKD were published until 1995. The number of reported cases is too small to draw any conclusions about this issue. In addition authors discuss the difficulties of diagnosis amd very high risks of vascular surgery treatment.

Assessment of some trace elements in very old individuals in Varna region, Bulgaria

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OP

The aim of this study was to estimate some trace elements both in plasma and erythrocytes of very old healthy individuals. Forty three subjects over 80 years were examined. The control group was of 39 healthy persons under the age of 60 years. Mg, Zn and Cu were measured with atomic absorption spectrophotometer AAS - 3030 B Perkin Elmer. Our results showed that Mg concentration in plasma and erythrocyte was in normal values in healthy very old individuals. Plasma Cu showed a tendency of increasing. The intraerythrocytic (RBC) Cu was significantly decreased in the age 80-89 years in comparison to controls, resp. (11,35 ± 5,42 μmol/l vs 16,74 ± 5,66 μmol/l). Plasma Zn was in normal range with a slight tendency of decreasing, while RBC Zn was significantly lower in the both elderly groups in comparison to controls, resp. 80-89 years (158,23 ± 43,49 μmol/l) and 90-102 years (150,00 ± 23,75 μmol/l) vs (230,56 ± 51,47 μmol/l). Our results showed that the study of RBC Cu, Zn and Mg gives a more adequate information for their actual nutrient status and reveals a deficiency of Cu and Zn in healthy individuals over 80 years. We recommend food enrichment with Zn even in healthy elderly individuals.

Uroinfection in elderly patients with chronic renal failure

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PP

Uroinfection is a frequent reason for deterioration of renal function in elderly patients.After adequate treatment in

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some patients with chronic renal failure (CRF) their renal function can reverse to its initial value or they have so called "reversible" CRF. The aim of this study is to establish the role of uroinfection in renal diseases with chronic renal failure (CRF) in elderly people in North-Eastern Bulgaria (Varna region) and the share of reversible CRF after treatment. We investigated 564 patients, 65 years and older with renal diseases in 11 general practices. In 153 of them we established CRF. This group of patients we investigated for a period of two years (2000-2002). The main cause for CRF was uroinfection in cases with exacerbated calculous pyelonephritis and benign prostatic hyperplasia (62%), followed by hypertonic nephroangiosclerosis (12%) and diabetic nephropathy (11%). In 11.76% of the patients – 4 women and 14 men we established a reversible CRF due to uroinfection. The worsening of renal function was mainly caused by urostasis in benign prostatic hyperplasia (13 pts) and bilateral urolithiasis in 3 women. After adequate antibiotic and anti-inflammatory treatment and solving the obstructive problem in 18 pts, the CRF promptly decreased and introducing of hemodialysis was avoided for a long period.

Genetic factors predisposing to Balkan endemic nephropathy

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OP

Balkan endemic nephropathy (BEN) is a primary, chronic interstitial nephritis of unknown etiology. The disease progresses to intense fibrosis, tubular atrophy and renal failure. About 30-48% of BEN patients develop epithelial cell tumors of the upper urinary tract. It was supposed that polymorphic genes of xenobiotic-enzyme system and transforming grow factor β (TGFβ1) in combination of with various environmental factors may result in an increased risk for the disease. 96 non-related Bulgarian BEN patients and 112 healthy Bulgarians from non-endemic regions were studied for 27 alleles and genotypes at 9 genes: CYP2D6, CYP3A4, CYP3A5, NQO1, NAT1, NAT2, GSTT1, GSTM, and MDR1. The polymorphisms were detected using real time PCR with allele-specific probes on Light Cycler and melting curve analyses. It was found higher risk for carriers of CYP3A5 genotype G6986/A6986 (OR 2.5) which increased when this genotype was combined with active GSTM1 (OR 3.13), NAT1 genotype rapid/slow (OR 7.95) or null GSTT1 (OR 10.07). The established lower frequency of the variant allele 263Ile in BEN patients (p=0.047) may serve as an indicator that active TGFβ1 protein is more frequent in BEN patients than in common Bulgarian population.

Patient assessment of quality of care in haemodialysis and peritoneal dialysis units

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PP

This study, designed to assess patients' perceptions of health care in dialysis units, included 55 patients, 25 on HD (11 men/14 women, aged 27-79) and 30 on CAPD (17 men/13 women, aged 34-77). They completed an anonymous questionnaire rating relations with staff, conditions in the unit, availability of drugs, transportation to HD unit and delivery of PD material. Given notes, ranging from 1 (very bad) to 5 (excellent), were statistically analyzed by Student's t-test. No differences were found regarding the source and amount of information given before the onset of the dialysis - 68% of HD and 76,67% of CAPD patients received information from their doctor. Only 60% of HD and 56,67% of CAPD patients considered them sufficient. No differences were found between HD and CAPD patients' rating of physician-patient relation (4,78±1,04 and 4,38±0,79), nurse-patient relation (4,84±0,47 and 4,52±0,68) and conditions in dialysis unit (3,92±0,76 and 3,76±1,14). Transportation to HD unit was rated with 3,44±1,14, and the delivery of PD material 3,11±1,18. The only statistically significant difference ($p<0,05$) was noted concerning availability of drugs (3,00±0,01 from HD and 3,71±1,10 from CAPD patients), probably because HD patients need more drugs then CAPD patients, and supply and refunding conditions are still not well regulated. Most difficult part of the treatment regimen for 60% HD and 43,33% CAPD patients is the obligation of coming to dialysis unit. Ultimate goal of health-care is to benefit the patient. Identifying areas of satisfaction and dissatisfaction is important to maintain the long-term viability of dialysis therapy.

Preliminary report. Bedside insertion of long-term tunneled catheters for hemodialysis: a nephrologist's view

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PP

Introduction: It is beyond any doubt that vascular access is the Achilles' heel of hemodialysis. As the end-stage renal disease (ESRD) population rises rapidly both in numbers and age, the creation of permanent vascular access becomes

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more and more difficult. Moreover, many patients are referred to nephrologists so late (75% in our center) that the use of temporary vascular access becomes necessary. Aim of the study: To assess complications of tunneled cuffed catheters inserted at the bedside by nephrologists. Patients and Methods: 5 patients (3 males-2 females), aged 58-88 entered the study. Three of them were diabetics, one had to stop CAPD after recurrent episodes of peritonitis and one had a long history of I.V. drug abuse. The procedure was carried out under strict sterile precautions. The preferred site of insertion was the right internal jugular vein according to the KDOQI guidelines. Real-time ultrasound guided puncture (3 patients) and blind insertion (2 patients) were used. Results: No acute complications (air embolism, infection, arrhythmias, arterial puncture, thrombosis, pneumothorax) were observed. All catheters were used at the same day after insertion with flow rates between 250-350 ml/min. Conclusions: Tunneled cuffed catheters can be the first choice, whenever temporary access is planned to be used for more than three weeks. Insertion by the relatively trained nephrologist using ultrasound guidance (without fluoroscopy) is a safe and relatively easy procedure that offers a rapid and occasionally long term solution to a continuously rising population of patients with major vascular access problems (diabetics, elderly, obese patients).

Quality of life deterioration uppon hemodialysis initiation in elderly patients

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PP

As average age of patients (pts) with end-stage renal disease who start chronic hemodialysis(HD) increases, ethical dilemmas and questions regarding consequences on their quality of life emerge. AIM: of our study was to evaluate parameters that correlate with the quality of life of elderly pts who start HD. METHOD-PATIENTS: 19 pts (13 male, 6 female) were involved. Mini mental state, Karnofsky scale and GDS-30 were used in order to evaluate mental state, performance status and geriatric depression, respectively, prior and six months post HD initiation. RESULTS: 7 of 19 pts died prior to completion of our study, and their majority (5 of 7) aged >75 years old. All of our pts experienced deterioration in all quality of life measures. Paired samples t-test detected a statistically significant reduction in Karnofsky scale (p=0,01), whereas reduction, non-statistically significant was noted both in GDS-30 and in mini mental scale. Pts >75 years old compared to pts<75 years old showed a higher degree of deterioration. DISCUSSION: Quality of life seems to be negatively influenced in elderly pts who start HD. Initiation of chronic HD should be therefore considered by physicians by co-evaluation of possible quality of life deterioration and high mortality rate.

Cyclosporine A-induced nephrotoxicity is associated with decreased renal BMP-7 expression in rats

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PP

Aim: The aim of our study was to investigate the BMP-7 expression in a rat model of chronic cyclosporin (CsA) toxicity compared to healthy controls and to investigate the influence of angiotensin converting enzyme inhibitor quinapril on BMP-7 expression in the rat model of chronic CsA toxicity. Methods: Twenty-four male wistar rats were included in the study. Eight were administered CsA, 15mg/kg intraperitoneally for 8 weeks(Group CsA), 8 received quinapril 10 mg/kg/d in drinking water in addition to CsA (Group CsA +Q) and the remaining 8 were healthy controls (Group H). The renal tissues were examined by light microscopy for the findings of CsA toxicity assessed by the presence of tubulointerstitial damage and afferent arteriolopathy. BMP-7 expression was semiquantitatively scored after standard immunohistochemical staining by BMP-7 Results: Mean serum CsA levels wed 1968ng/ml for CsA and CsA+Q group respectively . Mean serum creatinine levels were 0.8 + 0.2 mg/dl, 1.6 + 0.8 mg/dl and 1.4 + 0.8 mg/dl in groups H, CsA and CsA+Q respectively, at the end of the study period. Interstitial fibrosis, tubular atrophy and afferent arteriolar hyalinization was present in CsA and in CsA+ Q, though to a lesser degree, when compared to group H. CsA treated rats had significantly decreased BMP-7 expression as compared with healthy controls ($P<0.0005$). BMP-7 expression was higher in group CsA+Q than group CsA. Conclusion: In the rat model of CsA induced nephrotoxicity characteristic histologic changes are associated with decreased expression of BMP-7, furthermore, the decreased BMP-7 expression in CsA induced nephrotoxicity seems to be favorably affected by ACE inhibition.

Comparison of C2 monitorized cyclosporine and tacrolimus based immunosuppressive regimens in renal transplant recipients

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OP

Recently, C2 monitorization of cyclosporine A (CsA) based

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immunosuppressive regimens has been proposed to have lower acute rejection risks and side effects compared to classic approach based on the through levels. There are very few reports comparing C2 monitorized CsA and tacrolimus (TAC) based regimens. In this study, C2 monitorized CsA and TAC regimens were compared in terms of acute rejection and side effect profiles. The study was constructed on 72 renal transplant patients whose operations were performed between December 2001 and September 2002. Out of 72 patients 30 were on CsA based (group I) and 42 were on TAC based (group II) immunosuppressive regimen. All patients were also received prednisolone and mycophenolate mofetil. In group I, CsA dosages were modulated by C2 monitorization. Age, gender, transplant types (living-related or cadaveric), CRF etiologies and HLA mismatches were similar in both groups. AR rates were similar in both C2 monitorized CsA based and TAC based groups (10 % in group I ,11,9 % in group II; p>0,05). DM rates were 13,3 % in group I and 11,9 % in group II (p>0,05). But in group II, 3 of 5 patients in whom DM developed required insuline therapy. Two of them then discontinue insuline therapy after 6 months. However in group I non of the diabetic patients require insuline therapy. Our results suggest that, acute rejection rates and diabetes mellitus development risk were similar in both C2 monitorized CsA and TAC based regimens.

Influence of tacrolimus and mycophenolate mofetil regimens on acute rejection rate and side effect profiles in renal transplant recipients

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OP

In this study we investigated the influence of tacrolimus (TAC) and mycophenolate mofetil (MMF) based immunosuppressive regimen on acute rejection rate and side effect profiles in renal transplantation recipients.Study was constructed on 80 living-related, 40 cadaveric totally 120 renal transplant recipients (82 male, 38 female) with a mean age of 35±10 years (16-58). They were operated between August 1999 and September 2002. HLA mismatches were 3±1 (0-5). All patients were received prednisolone, MMF (2 gram/day for first 14 days posttransplantation (posttx) and then 1 gram / day) and TAC (0.2 mg/kg/day). They were followed for the development of rejection attacks and side effects. Diabetes mellitus was seen in 13 patients (9 male, 4 female; 10.8 %). At the beginning seven of them required insulin therapy but after 6 months posttx five recipients didn't need insulin therapy anymore and switched to oral antidiabetic drugs, Other diabetic patients glucose profile were regulated with oral antidiabetic drugs (2) and diet (4). Hypertension was seen in 58 patients (48.3 %). Biopsy proven acute rejection was observed in 16 of 120 patients (13,3 %). Six out of 120 patients had lost their grafts throughout the study period. One of them died because of suicide, one patient died because of cytomegalovirus disease and hemophagocytic syndrome, one due to posttransplant lymphoproliferative disorder and two of them died due to cardiac arrythmia. Only one patient lost his graft due to acute accelerated vascular rejection. Biopsy proven chronic rejection was developed in one patient.In conclusion , although insulin dependent diabetes mellitus seems to be high during posttx 6 months, this rate decreased to 1.6 % with the reduction of TAC dosage. We think that, TAC and MMF based immunosuppression is effective and safe in terms of acute rejection rates and side effect profiles.

Transient hydronephrosis due to a rare infectious disease in a renal transplant recipient

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PP

Posttransplant hydronephrosis can develop in renal transplant recipients due to infravesical obstruction and surgical complications, such as ureteral stricture and stenosis of the ureteroneocystostomy. Here, we report a renal transplant patient who presented with hydronephrosis and progressive allograft dysfunction. CASE: An 18-year-old female renal transplant patient was hospitalized due to a progressive rise in serum creatinine level and hydronephrosis. The patient, who had end-stage renal disease due to chronic glomerulonephritis, had chronic ambulatory peritoneal dialysis treatment for one year and had a living-donor transplantation 9 months before admission. After an uneventful early posttransplant period, her serum creatinine levels started to increase six months after transplantation, reaching to 4 mg/dl. Meanwhile, she developed hydronephrosis which regressed spontaneously on follow-up ultrasonographic examinations. An allograft biopsy was performed because of the persisting high serum creatinine levels. The microscopic examination of the allograft showed diffuse inclusion bodies and the cytopathological examination of the urine showed numerous decoy cells, which is a pathognomonic finding for BK virus infection. The immunosuppressive regimen consisting of tacrolimus, MMF and prednisolone was changed to cyclosporine-A and prednisolone. Since the serum creatinine level reached to 6 mg/dl, a second allograft biopsy was performed which showed acute rejection. The serum creatinine level decreased to 3.5 mg/dl after pulse methylprednisolone treatment. The immunosupressive treatment was changed to rapamycin, azathiopurine and prednisolone. High dose gammaglobulin and cidofovir was given for the treatment of the BK virus infection. The clini-

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cal and laboratory findings stabilized after this treatment. In conclusion, BK virus infection should be considered in the differential diagnosis of renal transplant patients who present with deteriorating renal function and hydronephrosis.

Evolution of parathyroid hormone levels in patients on long-term haemodialysis

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PP

Introduction. The spectrum of renal osteodystrophy (RO) is changing, as a result of the increasing frequency of the low bone turnover and reducing of the high bone turnover form of RO. Data concerning to the distribution of RO particularly among long-term dialyzed patients (LTDP) are limited. The aim of this study was to evaluate the serum iPTH levels (iPTH) in patients under haemodialysis for more than 10 years and to evaluate its evolution during this period. Patients and methods. We determined iPTH in 25 haemodialysis patients (15 males, 10 females, age 57.45±13.30; range 30-83 years) who had been on haemodialysis for 163.29±42.08; range 121-264 months, and in 49 short-term dialyzed patients (STDP), (37 males, 12 females, age65±13.04; range 32-82 years) who had been on haemodialysis for less than 60 months (27.18±14.03; range 10-58 months). We also obtained the iPTH values, ten years ago, of the LTDP from their records. Results. Eleven/25 (44%) LTDP had moderate to severe hyperparathyroidism (HPT) (iPTH>500 pg/ml or parathyroidectomy) vs 11/49 STDP (22.44%), ($p<0.005$). Seven/25 (28%) LTDP had iPTH>500 pg/ml ten years ago (vs present, $p<0.05$). During a period of 10 years 6 patients with normal or low iPTH (<250 pg/ml) progressed to HPT, 2 patients with HPT were improved under medical treatment (iPTH<250 pg/ml), and 17 remained stable. Conclusion. We found a high incidence of moderate to severe hyperparathyroidism among long-term dialyzed patients. Hyperparathyroidism progresses in a considerable part of haemodialysis patients despite of intensive medical care.

Lipoprotein A and its relationship with other lipids in haemodialysis patients

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PP

Introduction. Lipoprotein (a) (Lp(a)) is a modified form of LDL-cholesterol. Serum Lp(a) levels are predominantly genetically determined and they are not associated with other serum lipids, but LDL-cholesterol, in general population. The aim of the present study is to evaluate the serum (Lp(a)) concentration in haemodialysis (HD) patients and to examine its relationship with other serum lipids parameters. Patients and methods. We measured Lp(a), total cholesterol, HDL-cholesterol, LDL-cholesterol and triglycerides in 94 HD patients (56 males and 38 females, mean age 65±15; range 37-83 years, 19 diabetic), and in 58 healthy controls (36 males and 22 females, mean age 63±13; range 35-81 years, 14 diabetic). We used multiple linear regression analysis to determine the correlation of serum Lp(a) with the rest measured serum lipids in the HD patients. Results. Mean serum Lp(a) was 65.77±58.79; range 5.60-235 mg/dl in HD patients, and 23.68±16.82; range 7-92 mg/dl in controls; $p<0.005$. Patients' serum lipids were as follows: Total cholesterol 239.15±51.10, LDL-cholesterol 151.97±40.03, HDL-cholesterol 43.90±9.81 and triglycerides 217.81±10 mg/dl. There was a significant correlation of serum Lp(a) with total cholesterol; $p<0.01$, with LDL-cholesterol; 0.001, with triglycerides; $p<0.01$ and an inverse correlation with HDL-cholesterol; $p<0.05$. Conclusion. We found significant correlations of Lp(a) serum levels with other serum lipids in haemodialysis patients. The above findings suggest that in renal failure there are more factors besides the genetic which modulate Lp(a) concentration in conjunction with the other lipid parameters.

Serum lipids and magnesium status in haemodialysis patients

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PP

Introduction. Elevated serum lipids in association with low free Mg have been found in patients with end-stage renal disease, whereas Mg supplementation has also been found to result to significant decrease of serum lipids in hypomagnesemic renal transplant recipients. The aim of this study was to examine the relationship between serum lipids and Mg status in haemodialysis (HD) patients. Patients and methods. Intracellular (IcMg) and serum Mg (sMg) levels were measured in 94 HD patients (56 males and 38 females, mean age 65±15; range 37-83 years, 19 diabetic) Serum levels were also obtained from the monthly follow-up of these patients for the last 12 months and the mean values were used for analysis. Results. Mean values of sMg were 2.81±0.32 in diabetic patients and 2.91±0.33 in non-diabetic patients (p=ns). IcMg were 57.33±20.25 in diabetic patients and 57.14±11.25 in non-diabetic patients (p=ns). Patients' serum lipids were as follows: Total cholesterol 247.93±75.53, LDL-cholesterol 152.06±44.66, HDL-

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cholesterol 41.13±8.55, triglycerides 276.13±113.02, Lp(a) 48.46±46.31 mg/dl in HD diabetic patients, and total cholesterol 245.04±51.19, LDL-cholesterol 157.45±47.46, HDL-cholesterol 43.37±7.65, triglycerides 227.41±112.19, Lp(a) 56.46±54.59 mg/dl in non-diabetic HD patients. No significant correlations between sMg or IcMg and each one of the serum lipid parameters neither in diabetic nor in non-diabetic HD patients were found. Conclusion. Serum lipids were not correlated with intracellular and serum magnesium neither in diabetic nor in non-diabetic HD patients. It is very likely that magnesium status modulates serum lipids only in cases of magnesium deficiency.

Dialysis associated ascites: it is possible to treat this rare form of severe volume overload with worse cardiac consequences

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PP

Dialysis ascites is a rare but important problem in hemodialysis patients. We planned a prospective study to investigate the effect of correction of hypervolemia on patients with dialysis ascites. Four hemodialysis patients (1 female, mean age 36±9years) with advanced ascites were investigated. The time on dialysis was 1 to 5 years; and the duration of ascites was between 3 months and 2 years. Two of the patients were hypertensive and three had cardiomegaly on teleradiography; none of them had peripheral edema. All of the patients were admitted to the hospital, put on salt-free diet and antihypertensive drugs were stopped. Hemodialysis (HD) and isolated ultrafiltration (UF) were performed alternatively for 6 days a week. Echocardiography and abdominal ultrasonography (USG) was performed at admission, after the disappearance of ascites and then at the third month of admission. In four weeks of alternate HD/UF sessions a mean of 23±8 kg weight reduction occured and ascites disappeared in all patients. At the end of three months of HD/UF treatment blood pressure returned to normal and echocardiographic findings improved. Left atrium diameter decreased from mean 4.6±0.6 to 3.9±0.9 cm; right venticle diameter decreased from mean 3.1±0.7 to 2.4±0.3 cm, ejection fraction increased from mean 53±13% to 60±9%; and mitral and tricuspid valve regurgitations decreased. In conclusion, although dialysis ascites is a rare complication of inadequate dialysis and a severe form of hypervolemia that causes cardiac dilatation and eventually heart failure, it can completely be cured by salt restriction and isolated ultrafiltration sessions that can be added to routine HD treatment.

The management of hyperlipidemia in CAPD patients

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PP

The high risk of atherosclerosis in continuous ambulatory peritoneal dialysis (CAPD) patients is further increased by common lipid disorders (hypercholesterolemia –HC and combined hyperlipidemia –CHL). High triglyceride (Tg) and low HDL- cholesterol (C) levels are typical for CAPD patients, and elevated LDL-C is also common. CAPD patients with CHL (LDL-C>4,0mmol/l; TG>2,3 mmol/l) and isolated HC (LDL-C>4,0mmol/l; TG<2,3 mmol/l) participated in a randomized double-blind parallel 24 week comparison between fluvastatin (31) and gemfibrozil (n=29). Fluvastatin was administered 20mg/d while gemfibrozil was given 300mg twice daily. Fluvastatin caused decrease a 38,5 – 42% in CHL and HC, while gemfibrozil caused a 15% decrease in HC and no change in CHL. Fluvastatin had no effect on TG levels in HC but resulted in a 28% decrease in CHL, and gemfibrozil caused a 52% fall in TG levels in both lipid phenothypes. Fluvastatin was highly effective in lowering LDL-C in both lipid phenotypes, fluvastatin is consequently preferred treatment of HC and CHD. Gemfibrozil can be used in normocholesterolemic patients high triglyceride levels.

Clinical risk factors of patient and graft survival after first kidney transplantation

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OP

The purpose of this study was to evaluate the effect of common clinical variables on patient and graft survival. Three hundred sixty three patients (pts), 235 men and 128 women, 39 years old (range 16-69), received a first renal transplantation from 1.1.1987 to 31.12.96. The influence of hypertension after renal transplantation, donor and recipient age, cold ischaemia time and waiting - list dialysis time were evaluated. Kaplan – Meier and Cox Regression were used for statistical analysis. One and 5 year patient (pt) and graft (gr) survival of the whole sample was 96.14% (pts) / 87.33% (gr) and 90.63% (pts)/ 68.60% (gr) respectively. The relative risk of patient death was affected significantly by recipient age and waiting - list dialysis time (p: 0.001 and p< 0.0001 respectively). The relative risk of graft loss was affected by donor age and cold ischaemia time significantly (p: 0.001 and p: 0.031 respectively). Grafts of hyper-

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tensive patients presented significantly lower survival rates compared to grafts of normotensive patients and the one and five year graft survival was 93.63 % / 78.34 % and 93.94 % / 84.85 % respectively (p: 0.022). In conclusion the relative risk for patient death increases significantly with increasing age and waiting – list time on dialysis. The relative risk for graft survival increases significantly with increasing cold ishaemia time and donor age. Hypertension after renal transplantation affects negatively graft survival.

Evaluation of the effect of serum creatinine and body weight on blood pressure of renal transplant recipients

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OP

The aim of this study was to investigate the effect of serum creatinine levels and body weight on blood pressure of renal transplant recipients during a five - year follow up. Two hundred seventy two renal transplant recipients (183 male and 89 female) 38 years old (range 17.1 – 64.12 years) were evaluated. Systolic blood pressure (SBP), diastolic blood pressure (DBP), serum creatinine (Cr) levels and body weight (BW) were recorded on the 7th, 15th, 30th post-operative day (pod), on the 3rd, 6th and 12th month and on the 2nd, 3rd, 4rth and 5th post – transplant year. Descriptive statistics and multiple regression analysis were used for statistical analysis. SBP / DBP were 154.32±18.93 / 93.89±10.22, 143.22±18.57 / 89.01±10.04, 135.39±17.36 / 86.40±9.63, 133.26±17.22 / 85.53±9.88, 134.75±18.06 / 86.63 ± 11.26, 134.45±17.85 / 85.05±10.70, 133.80±16.76 / 85.06±9.54, 133.54±18.25 / 85.90±10.63, 133.69±15.88 / 85.43±8.75, 134.74±14.44 / 84.63±8.54 respectively on the above mentioned time intervals. Cr (mg/dl) and BW (Kg) were 2.41±2.16 / 65.06± 12.31, 2.02±1.67 / 62.84±11.72, 1.73±1.03 / 61.72±11.02, 1.50±0.61 / 62.93±10.51, 1.54±0.75 / 64.57±10.57, 1.46±0.46 / 65.79±11.40, 1.60± 0.81 / 65.79±11.47, 1.80± 1.39 / 65.60±11.33, 1.55±0.79 / 66.50±11.69, 1.65±1.04 / 65.56±11.41 respectively according to the above mentioned time intervals. Multiple regression analysis showed that serum creatinine had a significant effect on SBP (t: 7.00 and p: 0.000) and DBP (t: 5.72 and p: 0.001). Body weight effect on blood pressure was not significant. Graft function measured by Cr affects significantly the systolic and diastolic blood pressure of renal transplant recipients with a five - year follow up. Body weight does not affect blood pressure.

Relevance of procalcitonin levels in comparison to other markers of inflammmation in haemodialysis patients

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PP

PURPOSE: Procalcitonin (PCT) has been confirmed in numerous studies as a strong marker of inflammation. The objective of this study was to evaluate the diagnostic value of serum PCT in HD patients and its correlation to other traditional inflammatory markers. METHODS: We measured plasma PCT levels in 120 patients on HD (71 male, age 63+/-11,72 years, on dialysis for 55,6+/- 93,03 months, 12 h/week). PCT levels were compared with other markers of inflammation including C-reactive protein (CRP), interleukin-6 (IL-6), prealbumin, albumin, haemoglobin (Hb), ferritin and epoetin (Epo) doses. Relations between parameters were studied by Spearman's correlation. RESULTS: PCT concetrations were higher than the upper normal limit of 0,5ng/ml in 38% of the patients. PCT values were high in patients with an inflammatory status, while IL-6 values were elevated in all patients regardless of infection status (IL-6: 12,7+/-24,1 pg/ml M+/-SD, normal values < 3,13 pg/ml). Pre-albumin concentrations were 0,27 +/-0,10 g/L (M+/- SD) (normal values: 0,2-0,4 g/L). Plasma CRP concentrations were 1,1+/-3,6 mg/L (M+/- SD) and with IL-6 were positively correlated to each other. Pre-albumin was negatively correlated with CRP and IL-6. Hb was negatively correlated with prealbumin and Epo doses, while Epo doses were positively correlated with CRP. CONCLUSIONS: PCT is a reliable marker of inflammation in HD patients. The combination of elevated IL-6 and CRP levels was associated with an altered nutritional status. The concomitant elevations in PCT,CRP and IL-6 could more sensitive in the evaluation of inflammation than each marker separately.

Online clearance monitoring: haemodialysis treatment and patients' benefit

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OP

Evaluation of haemodialysis adequacy has enormous importance for dialysis patients' quality of life and their wellbeing. Standard methods such as Kt/V index and URR are ex-

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pensive for every day implementation in large number of patients. Application of Online Clearens Monitoring (OCM) gives opportunity for permanent control and measuring of delivery dialysis dose, as well as haemodialysis program individualization. Aim of this study was to evaluate delivery dialysis dose using OCM, to analyze improvement of dialysis quality depends on different dialysis parameters and to detect influence of quality of treatment on morbidity rate, as well as optimization of haemodialysis equipments. This investigation was performed during 2002. in International Dialysis Center Banja Luka. We used haemodialysis machines with OCM software. During this year 17810 treatments have done. Low flux was 68 %, and 32 % high-flux. Online Clearens monitoring was used to check 31 % or 5572 treatments. Average OCM Kt/V values were compared with standard equilibrated Daugirdas Kt/V and URR values measured monthly. Parallel we made corrections dialysers and membranes to improve quality of treatments (positive trend of high-flux and larger surface of membranes). Evaluation of morbidity rate expressed by number of hospitalization days shoved decrees of number of hospitaliyated patients on chronicle program and number of hospitalization days. This results shows that application of OCM in evaluation of delivery dialysis dose significantly improve quality of haemodialysis treatments and consequently patients' wellbeing, optimization of haemodialysis equipments and resources, and decrees morbidity rate and care expenses.

Cardiovascular mortality in renal transplantat patients

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PP

According to the literature data, cardiovascular mortality is the main cause of death and the main cause of graft loss in renal transplant patients (Tx pts). The aim of study was to evaluate a cardiovascular mortality in 12 years follow up (1986-1998). The group consisted of 116 patients (82M) average 36±16 arson the time of transplatation moistly (64%) with triple drug immunosuppressant (Cy A, Aza, Pred) and with cadaver organ donation(61%). During the follow up period 52 pts died. Cardiovascular mortality was present in 35 Tx pts (28M). Cardiac arrest was present in 3 Tx pts (6%), brainhemorrhage 3 (6%), rupture of aorta 1pt (2%), cardiomyopathy with heart failure 19 pts (36%), myocardial infarct 9 pts (17%). The group where with high prevalence of hypertension 88%, hiperlipidemia 81%, diabetic 9,5%, obesity 28%, smoking 27% and 11% sedentary pts. Conclusion. This cardiovascular mortality reflects high prevalence of risk factors particularly as hypertension, hyperlipidemia and smoking.

Erythropoietin treatment, arterial hypertension and left ventricular hypertrophy in patient with chronic renal failure

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PP

Objective: To evaluate the influence of erythropoietin (EPO) treatment on arterial blood pressure (BP), left ventricular hypertrophy (LVH) and renal function in patients with chronic renal failure (CRF) and concomitant anaemia was the purpose of the study. Design and Methods: 34 patients (18 men and 16 women),aged 43,85±17,25 years were treated with EPO in week dose 4490±830 IU for 6 months. We evaluated the changes in systolic,diastolic and mean BP (SBP,DBP,MBP), diagnosed by ambulatory BP monitoring. Serum creatinine levels (Scr),glomerular filtration rate (GFR),Hb and Hct were measured once a month. LVH expressed by left ventricular mass index (LVMI) was investigated before and after 6 months EPO treatment by transthoracic echocardiography M mode. Results: At the start (1); at the end of the six months treatment period (2)

	Hb(g/l)	Scr micr-mol/l	GFR ml/min/1,73m2	SBP mmHg	DBPm mHg	MBPmm Hg	LVMIg/m2
1	95.68±10.05	242.29±92.19	29.02±12.35	139.26±19.46	85.88±8.83	112.57±13.75	187.48±38.25
2	117.03±14.13	245.42±104.4	28,26±12,24	146.56±17.48	92.34±9.99	119.08±13.41	189.62±39.11

p<0.001 n.s. n.s. n.s. <0.01 n.s. n.s.

Applied EPO dose combats anaemia effectively. There was preexisting hypertension (SBP>140; DBP>90 and MBP>106mmHg) in 10 pts (29,41%). No significant changes in SBP, DBP and renal function as well as no regression of LVH were established. After 6 months EPO treatment ther was DBP elevation over 10 mmHg in 15 pts (46,88%). Conclusions: It was demonsrtated that no hypertension and LVH worsening was found after 6 months EPO therapy. Risk factors were: a genetic predisposition or preexisting hypertension, high EPO doses and rapid increase of the Hb and Hct. Preventative measures including optimising antihypertensive therapy and raising the Hb and Hct levels slowly could reduce EPO-induced arterial hypertension.

Renal sodium and water handling in patients with lithium-induced nephropathy

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PP

Long-term treatment with lithium (Li) induces functional

and / or structural disturbances in the kidneys. The lithium clearance [CLi] as quantitative index of proximal tubular sodium [S] and water [W] transport was used in assesmennt of the W and S reabsorption [R] in tubules proximal [P] and distal [D] separately. CLi and CNa , glomerular filtration rate [GFR] as creatinine clearance (CCr), the minute diuresis [V] were measured. The (A) absolute and (F) fractional W and S reabsorption were estimated by K Thomson,s expressions (1990). A total of 49 patients with affective disorders and long-term Li treatment (22 men and 27 women) were studied with 9 age-sex matched healthy controls. The results were as follows:

Indices	Patients	Controls
APWR=(GFR–CLi)	73,35±32,6	39,1±16,46
APSR=(GFR-CLi)xPNa	10559±4783	5459±2342
ADWR=CLi–V	13,15±7,76	30,47±20,0
ADSR=(CLi–CNa)xPNa	1981±1152	4507±2974
FPR=1–CLi/GFR	83,3%	51,7%
FDWR=1–V/CLi	89,6%	96,3%
FDSR=1–CNa/CLi	93,3%	97,9%

CLi was decreased in patients (14.73±8.03 vs. 31,64±20,49 in controls, p<0,02). Compared with the controls, the patients had higher GFR (indicative of glomerular hyperfiltration) and decreased CLi (indicative of increased S reabsorption in the proximal tubule). The increased tubular S and W reabsorption directed primarily to the proximal tubules were associated , probably, with a decrease in renal blood flow. Long-term treatment with Li ,even when plasma Li+ concentrations are below 1 mmol/l, reduces aldosterone-stimulated Na+ transport in the distal nephron. Conclusion: CLi techniques can be used to evaluate glomerulo-tubular function in patients with Li-induced nephropathy. Decreased CLi contributed to tubular reabsorption dysfunction.

The use of fresh frozen plasma in the treatment of hemolitic uremic syndrome in children

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PP

BACKGROUND: Hemolitic uremic syndromE (HUS) is an acute situation which is characterized by thrombocytopenia, hemolytic microangiopathic anemia and variable renal involvement from microhematuria, proteinuria till renal failure with or without oligoanuria. HUS is a common pathology of early childhood and the most frequent cause of acute renal failure. GOAL: To show our experience at use of fresh frozen plasma (FFP) for treatment of the children with HUS during 1996-2001 in our clinic. METHODS AND MATERIAL: We have studied 10 children with HUS. Their age was from 1 month to 12 years old. We have used three major criteria for HUS: trombocytopenia, hemolytic microangiopathic anemia and ARF. We have used the experience of a study done in Italy 1995 at the "Bambin Gesu" hospital Rome, which has found useful the use of FFP in the treatment of the children with HUS in condition of lack of dialysis. RESULTS: 6 of the children have had the typical ongoing of the HUS accompanied by loose stole syndrome. 4 children had progressive decrease of the diuresis to anuria. 5 children have developed arterial hypertension. After the intensive treatment of HUS with dopamine, diuretics, antihypertensives, antibiotics and FFP make possible that the majority of them to have improvement of their clinical and laboratory data. 6 children have had normal renal function within several weeks. 3 children have had developed CRF. 1 child has had fatal prognosis after six weeks of intensive treatment. This child has also dialysis abroad. CONCLUSION: According to different opinion on using FFP in the treatment of HUS, we are positive in using it with good results in the treatment of HUS in condition of lack of dialysis.

Prevalence and risk factors of malignancy in renal transplant recipients

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OP

Immunosuppression, certain viruses, diseases and environmental factors have been proposed to be associated with malignancy development in renal transplant (tx) recipients. In this study, we investigated the malignancy prevalance and the factors associated with malignancy in renal transplant recipients. Study was constructed on 514 renal tx recipients (362 male, 152 female; 357 living-related, 157 cadaveric) with a mean age of 32 ± 11 years (7 - 63). They were operated between November 1978 and September 2002. In this retrospective study, demographic data, immunosuppressive regimens, renal failure etiologies, pretx. dialysis modality, donor origin were investigated in all patients. Malignancy was diagnosed in 19 patients (3.6 %). The median diagnosis time of malignancies from the time of transplantation is 58 months (1-249). Malignancy types were as follows: Kaposi' sarcoma (1.16%), bazal cell carcinoma of skin (0.38%), squamous cell carcinoma of skin (0, 38 %), posttransplantlymphoproliferative disorder (0.76%), bazal cell and squamus cell carcinoma, hemangioperisitoma, larynx carcinoma, schwannoma and transitional cell carcinoma of urinary bladder in 6, 2, 2, 4, 1, 1, 1, 1 and 1 recipients, respectively. Immunosuppressive regimens containing azathioprine were significantly associated with malignancy development (6 recipient with steroid+azathioprin ; 10 recipients with steroid + azathioprin + cyclosporin; p= 0.006). Polyclonal antibody treatment was not associated with malignancy development (p= 0,878). Older age at the time of transplantation (p=0,028) and male gender (p=0,08) were found to be significant risk factors. As far as renal failure etiologies concerned polycystic kidney disease (4/19) and chronic glomerulonephritis (10/19) were associated with malignancy development (p=0,000). Skin was

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most frequently involved region and Kaposi's sarcoma was the most common tumor in our transplant population (p=0,000; p= 0.000). In conclusion increased age, male gender, azathioprin therapy, chronic glomerulonephritis or polycystic kidney disease as primary renal disease are associated with higher risk of malignancy development in renal transplant recipients.

Nutritional status and metabolic acidosis in hemodialysis patients

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PP

Metabolic acidosis has been implicated in increased protein catabolism and decreased protein synthesis. Low pre-dialysis serum bicarbonate concentration is commonly found in a number of well-dialyzed HD patients. However the influence of acidosis on nutritional status in HD patients has not been completely clarified. The aim of this study was to evaluate the effect of metabolic acidosis on nutritional parameters in HD patients. Sixty three patients were divided into two groups according to serum bicarbonate concentration on midweek pre-dialysis monthly laboratory values during the last five months. Group A included 34 patients who had a mean serum bicarbonate concentration of ≤ 19 mEq/L and group B included 29 patients who had a mean serum bicarbonate concentration of > 19 mEq/L. Nutritional parameters (serum albumin, total serum proteins, serum creatinine, normalized protein catabolic rate (nPCR) and body mass index (BMI)) were compared between the two groups. Mean serum bicarbonate concentration was 17.4±1.4 mEq/L in group A and 21±1.5 mEq/L in group B. The patients of group A had statistically significantly higher values than group B for nPCR (1.23 ± 0.14 vs 1.14 ± 0.15, p = 0.013), pre-dialysis serum urea (159±19 vs 140±20 mg/dl, p < 0.001), phosphorus (5.1±1.2 vs 4.3±1.1 mg/dl, p =0.01) and interdialytic body weight gain (IBWG) (2.3±0.7 vs 1.9±0.6 Kg, p = 0.006), while serum albumin, total serum proteins, serum creatinine, Kt/V and BMI values were not statistically different. There was a significant negative correlation between bicarbonate concentration and nPCR (p = 0.011), serum creatinine (p=0.014), serum phosphorus (p=0.001) and IBWG (p=0.009). nPCR and serum creatinine have been shown to be independent factors affecting mean bicarbonate levels in multiple regression analysis. Pre-dialysis acidosis in HD patients seems to be caused by a high dietary intake which results in an increased acid load.

The reliability of voiding cystourethrography in the diagnosis of vesicoureteral reflux

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PP

It is well known that the diagnosis of vesicoureteral reflux (VUR) in children can be over-looked by voiding cystourethrography (VCUG). In this study we wanted to represent the results of second VCUG in children with reccurent UTI and/or renal damage on DMSA-scan who had normal appearance on their initial VCUG. In this prospective study, 16 patients (15 girls, 1 boy) aged from 3 to 14 years (mean: 8.44?3.72 years) with reccurent UTI and/or renal damege on DMSA-scan underwent repeat VCUG during the period between April 1, 2001 and January 31, 2003. All patients had normal appearance on their initial VCUG. Mean time interval between initial and second VCUG was 17.31±10.65 months (range: 7-41 months). An abnormal renal scan was observed in 12 (75%) of 16 patients. All patients showed reccurent UTI during follow-up period. Among 16 patients, 11 (68.75%) had an abnormal repeat VCUG (Grade II VUR in 3 patients, Gr III VUR in 3, Gr IV VUR in 4 and Gr V in 1). In conclusion, VUR sometimes can be over-looked by VCUG. Those children who have normal VCUG with reccurent UTI and/or abnormal scan should be underwent repeat VCUG.

Influence of compliance of renal transplant recipients on clinical parameters

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PP

Non-compliance towards diet, medications and routine polyclinic control is a general phenomenon in medicine. As we know from the literature that renal transplant recipients' non-compliance is associated with late graft dysfunction and late garft loss. In this sudy we described compliance as obeying the routine 80% or more outpatient visits. This study evaluated compliance of 226 renal transplant recipients (150 male, 76 female; 8-70 years old age, median 38±12) operated between 1986-2001. Demographic data, number of controls that they come per month, cigarette smoking, alcohol intake were collected with a questionnairethat has been delivered to patients. 8 of them died; 4 due to hemophagocytic syndrome, 2 due to cardiovascular disease, 1 due to Kaposi' sracoma, 1 due to cerebrovascular bleeding. 23/26 patients has lost their graft. Compliance of

male patients are muc more lower than female patients, and this result was statistically significant (p=0.087). Compliance was not related with marital status (0.297),but increased with educational status of patients (p=0.059). Graft loss(p=0.546) and aging (p=0.509)were not found to be related with compliance. Also there was no relationship between compliance and mortality(p=0.526). Interestingly, living-related kidney transplant recipients' compliance was lower than cadaveric kidney transplant recipients', the result was statistically significant (p=0.024). Non-compliance was also related with cigarette smoking during pre and post-transplant period respectively (p=0.008 vs. p=0.03). Alcohol intake was also related with non-compliance (p=0.000). In conclusion male gender and living –related donation are related much more with non-compliance, but in contrast with literature our results showed no relationship between non-compliance and young age, graft loss, mortality. Compliance is increased with educational status of patients. Smoking and alcohol intake are closely related with non-compliance.

Cigarette smoking and alcohol intake in renal transplant recipients

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OP

Cigarette smoking and alcohol intake has been associated with a high frequency of post-transplant cardiovascular disease and may adversely influence the patients and graft survival. In European patients cigarette smoking prevalence is 35-40%, in The USA this prevalence is 25%. This study evaluated the rate of smoking and alcohol intake in 226 renal transplant recipients(150 male, 76 female;8-70 years old age, edian 38±12) operated between 1986 and 2001. Demographic data, dialysis modality, cigarette smoking, alcohol intake were collected with a questionnaire that has been delivered to patients during their routine polyclinic controls. Of those patients 39/226 has been on peritoneal dialysis prior to renal transplantation and 187/226 has been on hemodialysis. 219/226 of them are on their first grafts, whereas 7/226 of them were on their secondary grafts. 8 of them died; 4/8 due to hemophagocytic syndrome, 2 of them are due to cardiovascular disease, 2 due to Kaposi' sarcoma, 1 due to cerebrovascular accident. 23/226 patients has lost their grafts. Prior to transplantation 97 (42%) of them were on cigarette smoking, 29/226 (12%) continued to smoking after transplantation. There is no new smokers during post-transplant period. Like smoking prior to transplantation 29/226 of patients has got alcohol, 14/29 of them continued to take alcohol after transplantation. Our results showed that 15/97 of patients who had been smoking are women. Male gender significantly affects cigarette smoking (0.000). 12/97 smokers are single but 85/97 are married which was statistically significant (p=0.010). There was no significant relationship between pre-transplant smoking and educational status (p=0.354), graft loss and smoking (p=0.129), mortality and smoking (p=0.224). There was a significant relationship between pre-transplant and post-transplant smoking (p=0.000). Pre-transplant smoking and alcohol intake is significantly related and this relation continues after transplantation. There was no relationship between pre and post-tranplant smoking and diabetes mellitus and hypertension development after transplantation. After transplantation 29/226 (12%) continued on smoking. There was no relationship between mortality, graft loss and post-transplant smoking habitus. Interestingly post-transplant serum albumin level was lower in cigarette smoking patients than non-smokers (4,44±0,02 g/dL vs 4,3±0,02 g/dL ; p=0.019). There was a close relationship between transplantation duration and smoking. In conclusion male gender, marriage, pretransplant smoking habitus, alcohol intake are all retaled with post-transplant cigarette smoking. Education has no effect on decreament of smoking. But interestingly there is no relationship between smoking and mortality or graft loss in our patients.Cigarette smoking rate was found 42% in our end stage renal disease population. With the strict control and education on this issue, that rate improved and decreased to 125. We think that cigarette smoking not only cause cardiovascular risk but also thratens the patients life with the possible realtionship with the hypoalbuminemia.

Influence of inflammation on the relation between markers of iron deficiency in ESRD patients

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OP

Iron deficiency is an important factor in the management of anemia in both dialysis and transplant patients. Serum ferritin and transferrin saturation (TS) may be influenced by the presence of inflammation. Recently, the soluble transferrin receptor (s-TfR) has been considered to be a marker of functional iron stores. In this study, these parameters of iron state were investigated in terms of relation and agreement (assessed by kappa) in the diagnosis of iron deficiency, and, secondly to assess the influence of inflammation. Study was constructed on 38 hemodialysis, 31 continuous ambulatory peritoneal dialysis and 21 anemic renal transplant (TX) patients. Sensitive CRP and amyloid A protein (AAP) were studied as markers of inflammation. Iron deficiency was defined as ferritin <100 mg/l, TS <20%, or s-TfR >1.76 mg/ml. s-TfR levels were significantly related to both dialysis durations (r= 0.28 in dialysis and r= 0.60 in TX patients, both p<0.05) and PTH levels (r= 0.23 in dialysis and r= 0.55 in TX patients, both p<0.05). In TX group, ferritin and TS, and also TS and s-TfR were significantly re-

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lated (r=0.84 and r= -0.64, respectively), whereas s-TfR and ferritin were not. Ferritin and AAP were significantly related (r= 0.63) in TX patients. In dialysis group, ferritin and TS, and also TS and s-TfR were significantly related (r=0.35 and r= -0.30, respectively), whereas s-TfR and ferritin were not. Sensitive CRP and AAP levels were significantly related (r= 0.63) in dialysis patients. The kappa value for agreement between ferritin and TS in the diagnosis of ID was 0.76 (p=0.006), and 0.33 (p= 0.04) for the agreement between s-TfR and TS in TX group. In patients with sensitive CRP levels < 0.3 mg/l or AAP levels < 6.4 mg/l, the relation between parameters of iron state improved: The kappa value for agreement between ferritin and s-TfR was 0.49 (p=0.006) in dialysis group and 1 (p= 0.002) for that between ferritin and TS in TX group. Our results suggest that PTH levels may influence s-TfR levels. Disagreement between ferritin, TS and s-TfR as markers of iron deficiency might be explained by the effect of inflammation.

Iis there any effect of increament in serum albumin level on dialysis adequacy in peritoneal dialysis patients?

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PP

Malnutrition has been proposed to be an independent risk factor for morbidity and mortality in dialysis patients. Protein loss and hypoalbuminemia risk is increased in peritoneal dialysis patients. In this study dietary management of serum albumin status on dialysis adequacy was investigated. Pateints were on chronic continuous ambulatuary peritoneal dialysis (CAPD) aged between 35-72 (12 female, 13 male; median age 54±10). Study was done between April 2000 and December 2002 . Chronic renal failure (CRF) etiologies were diabetes mellitus (24%), hypertension (36%), chronic pyelonephritis (4%), polycystic kidney disease (8%), nephrolithiasis (4%), chronic glomerulonephritis (8%), others (16%). CRF duration was 74,7±36,5(33-168) months. CAPD duration was 70,3±31,2 (32-156 months). All patients serum albumin level was smaller than 4 mg/dL (3,09±0,3; 2,1-3,8). High protein diet (2 mg/kg) was ordered to all patients. One year later effect of increament of serum albumin level on kT/V was investigated. Serum albumin levels were found to be increased significantly with dietary management (3,09±0,37 vs. 3,89±0,48; p=0,000). kT/V values were not differ significantly with the increase of serum albumin levels (1,85±0,45 vs. 1,84±0,42; p=0,932). Our results suggest that dialysis adequacy were not explained fully by decreased serum albumin levels. Further studies were required in this isuue.

Should femoral catheters be used only for short-term applications? A comparison of duration and complications of temporary femoral and jugular catheters

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PP

Femoral and jugular catheters are often used as temporary access for hemodialysis. Although femoral catheter insertion is easy and safe, it is suggested to be used for a short period of time, mainly because of infectious complications. As we realized that some patients could have been dialyzed for a long time using the same catheter without apparent complications, we planned to investigate the duration and complications of dialysis catheters prospectively. We inserted 155 catheters (28 jugular, 127 femoral) to 101 patients (60 females, mean age 47±18 years). Mean duration of catheter indwelling was 30±21 days for femoral and 42±25 days for jugular catheters ($p<0.05$). Catheter infections were diagnosed in 22 of 127 (%17.3) femoral catheters during a mean time of 17±18 days. Almost all infections were cured with appropriate antibiotics, only 4 catheters were removed. For jugular catheters, 3 of 28 (%10.7) developed catheter infection during a mean time of 9±3 days; no catheter removal was needed. There was no significant difference between two groups regarding catheter infections ($p>0.05$). In femoral catheter group, 12 patients (%9.4) developed deep venous thrombosis at a mean time of 22±19 days; all of them improved by catheter removal and anticoagulant treatment. According to this study, because of a similar rate of infection and a mean duration of as long as 4 weeks, femoral catheter placement can be used as a safe and practical method for at least some dialysis patients such as with respiratory distress or hemorrhagic diathesis and for elderly patients in whom jugular intervention might be risky.

Upper gastrointestinal tract endoscopy and duodenum biopsy for the diagnosis of renal involvement of amyloidosis

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OP

Definite diagnosis of renal involvement of amyloidosis re-

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quires renal biopsy. In patients whom renal biopsy is contraindicated or dangerous such as end stage renal disease (ESRD) or hemorrhagic diathesis other tissue biopsies (subcutaneus fat, rectal mucosa, bone marrow, gingiva) are performed; but their sensitivities are variable. Twenty-one patients (8 female; mean age 41±19 years) with nephrotic syndrome (NS) in whom renal biopsy revealed amyloidosis and 32 patients (8 female; mean age 46±15 years) with ESRD in whom amyloidosis is suspected as the etiological factor but renal biopsy couldn't have been done were investigated. Upper and lower gastrointestinal tract (GIT) endoscopies were performed and various biopsies of antrum, duodenum and rectum mucosae and also gingival biopsies were obtained. In the NS patients group, 95% of duodenal, 74% of rectal, 67% of antral biopsies revealed amyloidosis. Gingival biopsies were performed in 15 patients and all of them were found negative for amyloidosis. In the ESRD patients group, 12 of them revealed no amiloidosis in all GIT and gingival biopsies. In 20 patients diagnosed as amiloidosis 100% of duodenal, 81% of rectal, 67% of antral biopsies revealed amyloidosis. Gingival biopsies of 13 of these patients revealed 38% amyloidosis. In conclusion, upper GIT endoscopy and duodenal biopsy is a sensitive and relatively noninvasive procedure and may be a reliable alternative to rectal and gingival biopsies, especially in patients with ESRD in whom amyloidosis is suspected but renal biopsy is contraindicated.

Epo resistance - is it depended on some inflamatory factors?

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PP

The purpose of the study was to evaluate the role of some laboratory markers of inflammation in the EpO resistance in hemodialysis patients (HDP). The following parameters were tested in blood of 21 HDP, devided in 2 groups (1st group: non-resitant,with Hb>9g/l and 2nd group: resistant to EpO,with Hb<9g/l): C-reactive protein (CRP), alpha1-AGP, alpha1-antitrypsin, haptoglobin (HP) (as acute phase proteins); transferin (TF) as an anti-acute phase protein. WBC, some enzymes - ASAT, ALAT and substrates: urea, creatinine, albumins, lipid profile, glucose, phosphates, iron, electrolytes and PTH. The study found significantly higher CRP, HP, Triglycerides, P and Alb in the 2nd group (resistant to EpO) than in the 1st group. TF was lower in all investigated HDP that may be due to the chronic inflammatory status(uremia) and there was no iron deficit or severe parathyroid hyperfunction to be convinced for EpO resistancy. The study suggests that EpO resistance may be related to the inflammation and the physicians must seek and treat the inflammation to overcome the problem with EpO resistance in HDP.

Changes of the lipid profile in the first year of hemodialysis treatment

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PP

To examine the changes of lipid status and its influence by some factors during the first year of hemodialysis treatment (HD) the study compared retrospectively the differences in the lipid fractions (T-C, Tg, LDL-C, HDL-C, Apo-A1, Apo-B, Lp-a) and in a number of serum biochemical markers known to interfere with lipid metabolism (Hb, Htc, fasting glucose /Glu/, BUN, T-protei /T-p/ and albumins /Alb/) that have been registered every month from the beginning of HD in 46 patients. No sex differences or EpO or hypotensive treatment's influences were found in the lipid profile for the each first followed year instead of a slight change at the 7th month perhaps due to the increased serum proteins. The study suggests that HD itself can not change the lipid state in general and the patients with affected lipid metabolism need some special treatment to avoid the risk of morbidity and mortality caused by atherosclerosis and cardiovascular disease.

Oxidative stress and PTH in hemodialysis patients

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OP

It was previously described that oxidative stress (OS) presents in uremic and hemodialysis patients (HDP) and red blood cell's (RBC) membrane is a preferential target for the injury. The present study tries to find if PTH as an uremic toxin has an additional influence on OS in HDP with secondary hyperparathyroidism (sHPT). 20 patients (pts.) (1th group) with sHPT (PTH>200ng/ml and AP>280 U/l) and 26 pts. (2nd group) without sHPT all treated by HD were tested for serum malone dialdehyd (MDA) as an end product of lipid peroxidation and some RBC's antioxidants: superoxid dismutase (SOD – U/mgHb), Vit.E (mg/l of pellet) and glutathione (GSH – nmol/mgHb). All pts. had increased MDA (4.69+/-0.42 nmol/ml) independently of PTH and AP levels. SOD*, Vit.E** andGSH*** were low in both groups but significantly lower in the 1th group (p*<0.01; p**<0.01; p***<0.05). The results suggests that sHPT decreases antioxydant systems of RBC but does not act sizeably on lipid peroxidation which is commonly elevated in uremia and HD. A question of importance is: whether pts with sHPT need stronger treatment against OS than the other HDP.

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Primary nephrotic syndrome of childhood. Twenty two years experience

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OP

Primary nephrotic syndrome (PNS) of childhood involves minimal change disease (MCD), focal glomerulosclerosis (FGS), mesangioproliferative glomerulonephritis (MePGN), membranoproliferative glomerulonephritis (MPGN), IgM nephropathy and membranous glomerulonephritis (MGN). Minimal change disease and the others might have a similar presentation, but long-term prognosis for the progression of end stage renal disease and treatment options of two groups are different. This retrospective study includes 102 children with PNS diagnosed during the last twenty-two years (1981-2003). Mean age of the study group was 64±45 months (ranged 8-168 months), 56 (55%) were male, 46 (45%) were female, the follow up periods were 56±50 months (ranged 1-208 months). Fifty-six (55%) patients were diagnosed as MCD with their initial presentations, laboratory features, the clinical course and renal biopsy findings (4 patients) in suspicious cases. Renal biopsy was performed in another 46 (45%) patients a group which we describe as 'the non-MCD group'. Membranoproliferative glomerulonephritis MPGN was found 19 children, FGS in 11 children, MePGN in 7 children, MGN in 5 children and IgM nephropathy in 4 children. A significant difference was found between the mean age of MPGN and FGS. The mean age of patients with MPGN had 2 times higher than the mean age of patients with FGS (124±40 months Vs 55±47 months, p=0,001). At presentation, the frequency of hematuria, hypertension, hypocomplementemia, elevated levels of creatinine and mean age of onset were significantly higher non-MCD group as compared to MCN group. Family history for renal disease was present only in non-MCD group. All of the patients who developed end stage renal disease were in non-MCD group.

Cisplatin induced anemia and preventive treatment with erythropoietin

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OP

Treatment of malignancies with nephrotoxic drugs, such as cisplatin can aggravate anemia in patients with neoplastic diseases. Concomitant treatment with recombinant human erythropoietin (rhuEPO) could prevent it. In an experimental study we assessed the anemic effect of cisplatin, its toxicity on the renal tissue and, the production of endogenous erythropoietin. Moreover, by preventive treatment with rhuEPO an attempt was made to ameliorate the anemic effect of cisplatin therapy. An open label, controlled experimental study was performed on male and female rats. They were 9-11 weeks old and 250-300 g of body weight. They were divided into three groups of 20 animals each. The control group of 20 rats was only treated by saline. The second group was given a single dose of 6 mg/kg body weight cisplatin peritoneally. The third group of rats was treated with the same dose of cisplatin and was pretreated with rhuEPO alpha at a dose of 150 IU/kg body weight three times per week, starting treatment six days prior to cisplatin therapy. The animals were followed for 28 days. The following parameters were recorded on days 0, 4, 8, 14, 21 and 28 of the study: complete hematological and biochemical parameters in blood and urine, endogenous production of erythropoietin by a RIA method, and histology of renal tissue. Hemoglobin level decreased in the cisplatin group by 20.64% between days 14 and 21, but it increased by 19.4% in the rhuEPO pretreated group compared to the control group of animals. Changes in hematocrit and the red blood cells followed these changes in hemoglobin correspondingly. Serum levels of endogenous erythropoietin decreased from 6.7 mU/ml at baseline to 2.6 mU/ml on days 4 and 8, and increased to 13.8 and 12.6 mU/ml on days 21 and 28 in the cisplatin treated rats. The endogenous erythropoietin in the control group remained at around 6 mU/ml throughout the study. Platelets were reduced by 27% in the cisplatin treated group, but were not corrected by rhuEPO. There was a significant reduction of body weight, creatinine clearance and diuresis in the animals treated with cisplatin and those with cisplatin and rhuEPO. The proteinuria in both treatment groups was of mixed non-selective character. On histology, the most significant changes of the renal tissue were noted in the proximal and distal tubules: tubular dilatation, vacuolization of the tubular epithelium and focal tubular necroses. The interstitium was edematous. No significant changes were noted in the glomeruli. Reparative processes started by day 14, and by day 21 of the study renal histology normalized. These changes were observed in both treated groups, but the histological changes seemed somewhat milder in the rhuEPO pretreated group. We could conclude that the anemia induced by treatment with cisplatin was of moderate degree, caused by the nephrotoxic effect of the drug. It could completely be prevented by pretreatment with rhuEPO.

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Changes of plasma human atrial natriuretic peptide in different types of hypertensive disorders of pregnancy

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OP

Objectives:To follow changes of plasma human atrial natriuretic peptide (hANP) (pg/ml), and to determine relationship with GFR (ml/min), urinary excretion of sodium (UENa) and hematocrit (HCT) in different types of hypertensive disorders of pregnancy. Subjects and Methods: We followed 38 normotensive gravidas (NT), 17 with chronic hypertension (CH), 13 with preeclampsia superimposed on CH (SPE), and 17 with preeclampsia (PE) at 8th, 18th, 23rd, 28th, 32nd and 36th week gestation (wg). Plasma hANP was measured by radioimmunoassay. Results: The concentrations of hANP in 8th wg were higher in CH, SPE and PE groups compared to NT (84.3±9 vs:110±24, 117±48 and 105±27, $p<0.05$). In NT group hANP decreased nonsignificantly from 8th - 32nd and in the 36th increased to 102±17, $p<0.008$. The same was shown by CH: 110±24 in 8th, $p=0.02$, a plateau till 32th, when decreased to 90±21 ($p<0.01$) and increase in 36th wg to 116±16 ($p=0.04$ vs NT). In contrast to this, SPE and PE maintained the plateau only till 23rd and then steep increase till 36th occurred: 125±40, 153±38,159±39, and in SPE 113.5±36, 144±43, 161±29 in PE ($p<0.05$ vs wg before 23rd, and in NT and CH, wg after 23rd). ANP correlated with MAP in NT ($r=0.25$, $p=0.000$) but not in PE. In 36th wg hANP correlated inversely with GFR ($r=-0.60$, $p=0.04$), UNa/24h ($r=-0.54$, $p=0.07$) and HCT ($r=-0.66$, $p=0.02$) in CH; in SPE with HCT ($r=-0.42$, $p=0.02$), and in PE positively correlated with HCT earlier in pregnancy - 18th wg ($r=0.77$, $p=0.002$). Conclusions: In SPE and PE elevated hANP might be important as a counterbalance to the vasoconstriction and sodium retention and could contribute to the state of low plasma volume and high HCT. In SPE and PE, hANP levels are significantly different from those in NP as early as the 8th wg and precede the clinical manifestation of the disease.

Thyroid function in symptomless, aged hemodialysis patients

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OP

Bearing in mind that in normal (or symptomless) population, thyroid function abnormalities are often increasing with age, in this study an attempt is made to investigate thyroid function in an also symptomless (normal) group of aged hemodialysis patients. Thyroid function of 109 HD patients, 61M-48F, with an age of 67,5±8,8 years (51-85) and on HD for 57,7±52 months (9-250) was assessed. No patient had history of thyroid disease, received any medication that could interfere with thyroid function or suffered from acute illness at the time of the study. In those patients, blood was drawn before the first dialysis of the week and FT3, FT4, TSH, Anti-Tg, anti-TPO blood levels were measured using RIA methods. Our results showed that a) two male patients (1,83%) presented subclinical hyperthyroidism as indicated from abnormally low TSH (<0,3μ IU/ml) and normal thyroid hormone levels (FT3 1,6-4,3 pg/dl, FT4 0,6-1,9 ng/dl), b) two patients (1M-1F, 1,83%) presented overt hypothyroidism as indicated from high TSH (>4 μIU/ml) and low FT3, FT4 and FT3 < 1,6pg/dl and F4 < 0,6ng/dl) and c) 10 patients (8F-2M, 9,17%) had high TSH values with normal levels (0,3–4 μIU/dl) of thyroid hormones suggesting subclinical hypothyroidism. Anti-Tg antibodies were abnormally elevated (>100 IU/ml) in 8 (7,34%) and anti-TPO (>10 IU/ml) in10 (9,17%). The higher percentage of women with abnormally high TSH values (18,75% vs 4,92%, $x2=5,24$ $p<0,05$) was the only statistically significant difference between males and females. In conclusion, thyroid function disturbances, mostly mild, were not unusual in the selected (>50 years old) HD population of our study. This finding bring us to the conclusion that screening of this HD population for thyroid function abnormalities is warranted since symptoms and signs are rarely suggestive.

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