P101

Access Recirculation in Normal and Reversed Arterial and Venous Functional Hemodialysis Catheter

Atapour A, Shahidi S, Mortazavi M, Beigi AA, Mosa-Kazemi M

Isfahan University of Medical Sciences

Introduction. Blood recirculation is one of the key factors of decreasing dialysis efficiency. Problematic hemodialysis (HD) catheters are routinely reversed to achieve adequate blood flow for dialysis delivery. The aim of the study is to determine the access recirculation (AR), in functional catheters in the normal and reversed positions.
Methods. Access recirculation was measured for 2 sequential hemodialysis sessions in 30 HD patients who had normal function permanent or temporary catheters. Data analysis was done by paired t test and variance analysis.
Results. The study group consisted of 30 hemodialysis patients aged form 19 years old to 81 years (mean 52 ± 15.7). AR was from zero to 20 percent (7.1 ± 6.9 percent) in first session and from 2.3 percent to 75 percent (20.5 ± 20.5%) in reversed line catheter (P = .012).
Conclusions. Access recirculation in both temporary and permanent functional catheter after reversing arterial and venous lines, was increased; therefore, it might decrease urea reduction rate and dialysis adequacy. It seems that, replacing malfunctioned catheter with a new one is better than reversing arterial and venous lines.

P102

Relative Frequency of Side Effects of Angiotensin-Converting Enzyme Inhibitors

Shahidi S, Sajadieh S, Sajadieh S

Isfahan University of Medical Sciences, Isfahan, Iran

Introduction. Angiotensin-converting enzyme inhibitors (ACE-I) are widely used in the treatment of hypertension. They have also been effective in a number of other disorders, prolonging survival in patients with heart failure, coronary heart disease, and acute myocardial infarction. They also slow progression of chronic renal failure. However, they are associated with characteristic side effects of cough, hypotension, hyperkalemia, decline in glomerular filtration rate, angioedema, dysgeusia, and skin rash. We perceived that referrals for these side effects have become more and more frequent. So, we decided to evaluate the relative frequency of side effects induced by ACE-Is.
Methods. This was a cross-sectional retrospective study which was carried out in a private nephrology center. Patients were assessed according to their age, sex, diabetes mellitus, type of complications, type of drugs, and time to onset of side effects. We assessed 1800 hospital records of patients gathered from 1995 to 2006 and 923 patients were eligible to be included in the study.
Results. A total of 923 patients who were under therapy with ACE-I (464 men and 459 women; mean age, 48.53 ± 15.62 years) were included. Of these patients, 70.9% did not have any complication and 29% presented with side effects. The overall incidence of cough was 18.7% (10.8% in males and 26.8 % in females; P < .001). The mean time to onset of cough was 1.8 month (range, 0.25 to 8 months). Cough in patients who received enalapril was more frequent than captopril (24.9% versus 13.8%). In patients under therapy with captopril, cough was not dose- and time-dependent. In patients under therapy with enalapril, cough was dose-dependent but not time-dependent. The other side effects were as follows: hyperkalemia (2.9%), acute renal failure (2.8%), hypotension (2.7%), skin rash (1.6%), and dysgeusia (0.3%).
Conclusions. The most common complication of ACE-I was cough. It was more frequent in female patients. This side effect was seen more frequently in the patients under therapy with enalapril versus captopril. The frequency of other side effects in our patients was similar to other reports.

P103

Study of the Correlation Between the Quality of Life and Self Efficacy of the Patients Under Hemodialysis in Hospitals Affiliated to Iran University of Medical Sciences and Health Services, 1384

Esmaeili M

Azad University of Karaj

Introduction. Hemodialysis (HD), as one of the most popular treatment of chronic renal failure, develops lots of alterations in patients' life style and life behavior which affect the patients' social and psychological performances. Enhancement of quality of life can be approached easily by promoting self efficacy, so to develop the self confidence as the first step in promoting self efficacy, nurses can do a lot. A better life is the consequence of this change in patients undergoing HD.
Methods. Study of correlation between the quality of life and self efficacy in patients under hemodialysis in hospital affiliated to Iran University of Medical Sciences and health services. The research sample included 255 HD patients selected by random sampling method. It

was correlation study in which questionnaire was used to gather the data.
Results. Based on findings, there was a statistically significant relation between quality of life and self efficacy (P < .001).This reveals that whenever the self efficacy is promoted, the quality of life would be more satisfactory .we also found that 73.1% of the patients possessed a moderate quality of life level and 71.4% had a moderate self efficacy level. Mean score quality of life and self efficacy among lower educated patients was lower in comparison with educated patients.
Conclusions. Overall, we found that majority of the sample group possessed moderative quality of life and self efficacy. Regarding the higher education level, as it was an important factor in promoting quality of life teaching self care sessation is highly recommended specially fore those with a lower education level. Besides, researches suggest off and on teaching class for who are chronically under hemodialysis because they may get tired and continuing of thire performance may be affected.

P104

The Effect of Pentoxifylline on Hemoglobin Levels in Patients With End-Stage Renal Disease, Receiving Chronic Regular Hemodialysis

Mooraki A, Jenabi A, Jabbari M, Khanipour Roshan S, Golestanpour A, Broumand B

Iran University of Medical Sciences

Introduction. Anemia is one of the major problems in the patients with chronic kidney disease (CKD). Despite receiving adequate doses of Venofer, Folic Acid and Erythropoietin (EPO), still some of the patientsremain anemic. Immune system is stimulated and production of cytokines (TNF, alfa IFN, gama IFN, etc) are increased in CKD patients. These cytokines suppress erythropoiesis and inhibit the effect of EPO. Pentoxifylline (PTF) is a hemorreologic drug with anti-inflammatory properties by inhibition of cytokines production. In our study PTF could improve anemia in patients with end-stage renal disease (ESRD).
Methods. This randomized clinical trial, without using placebo, 90 patients were selected and divided in 2 groups: cases (42 patients) and controls (48 patients). All patients including cases and controls received adequate doses of Venofer, Folic Acid and EPO. In group of cases PTF, 400 mg two times daily, was added to their medications. Duration of study was 6 months. At the beginning of study, 3 months later and also 6 months later Hemoglobin, Hematocrit, Serum Iron, Serum Ferritin, Total Iron Binding Capacity (TIBC), Transferin Saturation Test, Fasting Blood Sugar (FBS), Lipid Profile, Liver Function Tests, Sodium, Potassium, Calcium and Phosphate were measured.
Results. At the beginning of study: Mean hemogoblin was 9.55 ± 1.40 g/dL in cases and 9.52 ± 1.40 g/dL in controls (P value was not significant). After 3 months, the mean hemoglobin was 10.15 ± 1.24 g/dL in cases and 9.45 ± 1.18 g/dL in controls (P = .004). After 6 months, it was 11.68 ± 1.23 g/dL in cases and 9.54 ± 1.51 g/dL in controls (P < .001). Pentoxifylline had no adverse effects on liver function and showed no significant changes in FBS or lipid Profile.
Conclusions. CKD is associated with abnormal production of cytokines, which inhibit the effect of EPO. Pentoxifylline decreases cytokines production, improves the effect of Epo and finally increases the level of Hb. in patients receiving chronic regular hemodialysis.

P105

Association Between Hyperphosphatemia and Cardiovascular System in Stable Hemodialysis Patients

Malakoutian T, Nobakht-Haghighi A, Abdi E, Rambod M, Nobakht Haghighi N, Nobakht Haghighi E, Broumand B

Academy of Medical Sciences, Iran

Introduction. Cardiovascular disease remains the major mortality risk in dialysis patients. Hyperphosphatemia has been proposed as a predictor of shortened survival and excess cardiovascular death in end-stage renal disease (ESRD). The objective of this study was to examine whether hyperphosphatemia is associated with cardiovascular markers.
Methods. Eighty-nine Iranian stable ESRD patients (mean age, 52 ± 15 years) on maintenance hemodialysis (HD) (for 52 ± 46 months) were studied in this cross-sectional study. Serum biochemistry was measured. Left ventricular hypertrophy (LVH) was determined by standard echocardiography. Right common carotid artery (RCCA) diameter and Intima-media thickness (IMT) were assessed by Doppler ultrasonography.
Results. Fifty-seven percent (n = 52) of patients were male. Diabetes mellitus and hypertension constitute the two main underlying causes of ESRD in 29.2% (n=26) and 20% (n = 18) of patients, respectively. Hyperphosphatemia was found in 33.3% (n = 33) of them, and 55.1% (n = 49) had LVH. The proportion of LVH was higher in patients with hyperphosphatemia (67.7% n = 25) as compared with those without hyperphosphatemia (45.3%; n = 21; P = .046). However, the RCCA diameter was lower than in hyperphosphatemic patients (7.12 ± 1.66) in comparison with patients without hyperphosphatemia (5.91 ± 1.49; P = .012). Howevere, there were no correlations between IMT of RCCA and hyperphosphatemia.
Conclusions. Our results indicate that, in patients on maintenance HD, hyperphosphatemia is positively

associated with LVH but negatively associated with RCCA diameter. These findings support the important role of hyperphosphatemia as a risk factor for cardiovascular disease and justify the effort for optimal control of serum phosphorus level among HD patients.

P106

Hemodialysis Patients Who Did not Need Erythropoietin Supplementation in our Dialysis Center

Tayebi-Khosroshahi H, Abedi Azar S, Ebrahimi N, Ashrafi H, Pour-asgar A, Noshad H

Tabriz University of Medical Sciences

Introduction. Anemia is a major complication in patients on chronic dialysis. The availability of recombinant human Erythropoietin from 1989 has been one of the most significant advances in the care of anemia of patients with chronic renal failure (CRF) but some of dialysis patients didn't need to erythropoietin (EPO) supplementation. The aim of the present study was to evaluate factors that may have roles in rising of the hemoglobin (Hb) and hematocrit (Hct) without EPO supplementation in patients who were on mainainance hemodialysis.
Methods. In a cross sectional study we evaluated patients who were on chronic hemodialysis in two university hospital in Tabriz, Iran. Age, gender, duration on dialysis, dialysis session per week, causes of renal failure was recorded. Hb, Hct, serum calcium, phosphorus, alkaline phosphatase, cholesterol, triglyceride, serum iron, TIBC, ESR and CRP were measured monthly and serum albumin, ferritine every tree months. HCV Ab and HBS Ag were also determined in these patients. These patients were divided in two groups based on EPO requirement to have Hb and Hct above 11% and 33%, respectively, during 6 months period. Group 1: EPO supplemented patients. Group 2: without need to EPO supplementation. Then statistical analysis was performed using the t test. All data was presented with ± SD and P was set at 0.05.
Results. Group 1: Mean age of EPO supplemented patients was 52.39 ± 14.05 years with male- female ratio of 1.6/1. Mean duration on dialysis was 30.36 ± 27.90 months. Mean dialysis session per week was 2.36. HCV Ab was positive in about 23% of these patients. Mean Hb and Hct were 9.40 ± 1.97 g/dL. Group 2: without need to EPO supplementation. Mean age was 51.17 ± 16.19 years with male-female ratio of 1.5/1. Mean Hb and Hct were 11.60 ± 1.7 g/dL. Mean duration on dialysis was 67.38 ± 8.17 months. About 48% of these patients were HCVAb positive. There was no significant difference in age and gender between 2 groups. HCVAb was significantly positive in EPO non-supplemented patients (P = .03). Duration on dialysis was also significantly high in EPO non-supplemented patients (P = .001). More than 65% of patients who HBS Ag was positive did not need to EPO supplementation.
Conclusions. In conclusion, about 17 % of hemodialysis patients did not need to EPO supplementation. Duration on dialysis, positive HCV Ab and HBS Ag were factors that correlated with elevated Hb and HCT without EPO therapy. Positive serum for hepatitis C and B may be a trigger for extra renal synthesis of erythropoietin in organs like liver. Other studies with more patients recommended.

P107

Study of Plasma Vitamin E Changes in Patients on Hemodialysis

Seifi B, Kadkhodaee M, Zahmatkesh M

Department of Physiology, School of Medicine, Tehran University of Medical Sciences, Iran

Introduction. Vitamin E has been proved to be effective in preventing lipid peroxidation and the other radical-driven oxidative events by acting as a chain-breaking antioxidant that prevents the propagation of free radical reactions. The risk of cancer is high in patients on hemodialysis. In this study, we evaluated plasma vitamin E levels to investigate the oxidative stress (OS) status in Iranian patients on hemodialysis.
Methods. Twenty patients receiving hemodialysis and 20 control subjects (age- and sex-matched) were included in this study. Each patient was receiving dialysis, 3 times per week, 4 hours in each session. Before and after dialysis, a blood sample was taken for biochemical analysis as well as vitamin E measurements.
Results. The level of vitamin E was significantly lower in the patients on hemodialysis compared to the control group (25.94 ± 1.87 µmol/L; P < .05). There was no significant difference after hemodialysis (21.42 ± 1.72 versus 21.25 ± 1.62 µmol/L; P < .05) in comparison with predialysis vitamin E levels.
Conclusions. In our study, vitamin E levels were lower in the patients compared to control subjects, both pre-dialysis and post-dialysis, while there were no differences between pre-dialysis and post-dialysis levels. This may be suggestive of an oxidative stress status resulting in reduced antioxidant levels. Antioxidant therapy could be considered in these patients.

P108

Prevalence of Vancomycin-Resistant Enterococci Among Patients on Hemodialysis

Seyrafian S, Mobasherizadeh S, Mortazavi M, Taheri S, Emami Naini A, Ghassami M, Eshaghian A

Isfahan University of Medical Sciences, Iran

Introduction. Vancomycin-resistant enterococci (VRE) have been common in patients with end-stage renal disease (ESRD). Their prevalence among patients on hemodialysis is reported about 4.2%. The rapid spread of VRE is of concern, because infections due to these organisms remain difficult to treat; therefore, the severity of illness and administration of antimicrobial agents, particularly vancomycin, increase. We report the prevalence and risk factors of VRE colonization among patients on maintenance hemodialysis at Al-Zahra University Hospital in Isfahan.
Methods. This is an observational cross-section study. The baseline characteristics contained data on demographics, urea reduction ratio, duration of dialysis, method of sampling, serum Albumin concentration, history of hospital admission, antibiotic administration in the previous three months, place of living (urban or suburban), and functional status (similar to the Karnofsky performance scale). Specimens were inoculated onto selective agar plates containing 6 µg/mL of vancomycin; isolates growing on these plates were tested for vancomycin resistance. Isolates with a vancomycin minimum inhibitory concentration (MIC) greater than 32 µg/mL were considered to be VRE.
Results. Among 46 patients and staffs of the Al-Zahra hospital, 39 (84.4%) were patients and 7 (15.2%) were staff. Twenty-two (48.7%) were male and 24 (52.2%) were female. None of the staffs were positive for VRE. Fifteen (38.5%) of patients were positive for VRE. The VRE was not related to the age, sex, method of sampling, history of hospitalization, site of living (urban versus suburban), mean of serum albumin, functional status, and use of antibiotics in the past 3 months. Duration of hemodialysis more than 12 months was related to VRE positivity (P = .02).
Conclusions. The frequency of VRE-positive patients (38.5%) at our hemodialysis center was much more than is reported. Duration of hemodialysis was related to VRE positivity in the patients. Reverse association with other parameters probably is due to small size sample and we strongly suggest similar larger-size studies.

P109

Comparison of Intraluminal and Intavenonous Administration of Vancomycin in Permanent Hemodialysis Catheter on the Rate of Catheter Removal

Beigi AA, Khansoltani S, Atapoor AA, Eshaghian A, Ghassami M, Tavallai S

Department of Surgery, Esfahan University of Medical Sciences, Isfahan, Iran

Introduction. Patients who use Permcath as the vascular access for long-term hemodialysis are occasionally confronted with catheter-related infections. Permcath infections can lead to catheter removal in these patients. This is an important factor in morbidity and mortality of the patients. Successful use of a "locked-in" antibiotic to treat unusual gram-negative and more common organisms (staphylococcus) has been reported with good results in catheter infections. This study was designed to evaluate the impact of the intraluminal vancomycin in comparison with intravenous antibiotic administration.
Methods. This prospective experimental controlled study included 62 (32 males and 20 females) patients with end-stage renal disease with diverse etiologies. They were on long-term hemodialysis from July 2004 to June 2007 at our tertiary care hospital. Those patients requiring Permcath insertion for the maintenance or commencement of hemodialysis were eligible for the study. We excluded them, if they had allergy to vancomycin in the intervention group. The patients were divided into 2 groups. In the first group, 50 mL of vancomycin, 500 mg (in 100 mL normal saline 0.9%), that was injected via each lumen of Permcath and antibiotic lock by the last 1.5 mL (each 48 hours), with 1 g intravenous ceftriaxone (each 12 hours) for 7 days, and then oral antibiotics was administered according to the culture for three weeks. In the second group the routine intravenous antibiotic (intravenous vancomycin, 500 mg, plus 100 mg to 150 mg of intravenous amikacin, daily) was prescribed. Our endpoint was the assessment of catheter removal.
Results. Characteristics of the patients (age, time of insertion of the catheter, and number of dialysis per week) did not differ between the two groups. Of 28 patients in group 1, 1 catheter removal, and of 34 patients in group 2, 18 catheter removals were done. There was a significant reduction of catheter removal in the first group (P < .001).
Conclusions. This study has shown that administration of vancomycin via Permcath is more effective than intravenous administration of drugs, and it increases the life time of the catheter.

P110

Leptin and It's Correlation With Erythropoitin Requirement in Iranian Hemodialysis Patients

Rahimi A, Maziar S, Ahmadi F, Shahriari S, Fattahi F, Jam S, Moradmand Badie B, Kourorian Z

Tehran University of Medical Sciences, Tehran, Iran

Introduction. The primary cause of anemia in patients with Chronic Renal Disease (CRD) is insufficient production of erythropoietin (EPO) by the diseased kidneys. Therefore, the availability of recombinant human EPO (rHuEPO) has made possible one of the most significant advance in the care of renal patients.

Measuring of plasma leptin level in hemodialysis patients as an effective factor for erythropoietin requirement is important. We performed this study to determine plasma leptin of hemodialysis patients.
Methods. Fifty patients undergoing hemodialysis treatment at two main centers of hemodialysis therapy in Tehran, Iran were entered in a cross-sectional study. Body mass index (BMI) was calculated using the standard formula. Laboratory tests including: plasma albumin level, iron level, total-binding capacity, ferritin level, dose of erythropoietin unit per week, and leptin level were measured. Plasma leptin concentration was measured. Patients with a serum ferritin level<100 µg/dL or transferrin saturation less than 20% were excluded from the study.
Results. The mean BMI of patients was 22.9 ± 2.7 kg/m^2. The mean of duration on hemodialysis was 5 ± 3 years. The mean plasma leptin level was 18.3 ± 19.3 ng/mL, plasma albumin level; 4.4 ± 0.49 mg/dL, and mean erythropoietin dose; 107.4 ± 46.7 u/kg/w. Our study indicated that plasma leptin level correlated with sex, being higher in female patients than in male patients. A consistent relationship between duration of hemodialysis therapy and erythropoietin requirement was detected. In addition, the age was correlated with erythropoietin dose needed. Our findings did not indicate any correlation between weekly EPO dose and leptin level, BMI and plasma albumin level.
Conclusions. The primary cause of anemia in patients with CRD is insufficient production of erythropoietin by the diseased kidneys. Our study indicated that EPO requirements are not generally related to plasma leptin level in dialyzed patients. However, the putative effect of leptin on hematopoiesis is probably modest and may act synergistically with rHuEPO under certain conditions.

P111

Comparison of Effects of Dietary Education Methods on Laboratory Indexes and Weight Gain Between Two Dialysis Sessions Among Patients on Hemodialysis

Abbasi M,[1] Norouzadeh R[2]

[1]Nursing Faculty, Qom Medical University,
[2]Nursing and Midwifery Faculty, Shahed University

Introduction. A dietation has a key role in treatment of renal diseases. The objective of dietation in these patients is decreasing kidney workload, prevention of renal complications, maintaining appropriate diet status, and prevention of uremia and its complication. Diet is important among hemodialysis patients. Patient's well being is not only related to medication, but also dependent on compliance to dietary regiment and fluid limitation. With no adherence to diet regiment and fluid limitation, complications such as body fluid overload, increase of metabolic wastes, cardiovascular problems, and ultimately, early death occur. Diet regimen, fluid limitation, and mecations are essential for care and health maintenance in hemodialysis patients.
Methods. This is a clinical trial. Pre- and post-test was done in 113 patients on hemodialysis at Kamkar hospital in Qom, Iran. The patients were selected in randomized method. Three-month means of laboratory indexes and weight gain were extracted from medical records. Regarding the learning needs, we educated patients with two methods randomly. Samples were categorized into three groups. One group was educated with lecture method, the second group was educated with handout, and the third was the control group with no intervention. After three-month education, means of laboratory indexes (sodium, potasium, calcium, phsphorous, BUN, and creatinine) and weight gain between two sessions after education were calculated and then two means (after and befor education) were compared with each other.
Results. Results showed that 51.3% of the patients were men (age range, 19 to 78 years), 39.8% were house keeper, and 83.4% were married. Hemoldialysis duration was 3 to 278 months. In 45.5% of cases, source of education was the nurse. There was significant decrease in BUN (P = .001), phosphorous (P = .004), weight gain (P = .002), and calcium (P = .002).
Conclusion. Compliance to hemodialysis dietary regimen could recover laboratory parameters and weight gain. between hemodialysis sessions.

P112

Bone Mineral Density in Hemodialysis Patients

Nassiri AA,[1] Hakemi MS,[2] Abanga G[2]

[1]Shahid Beheshti University of Medical Sciences, Iran
[2]Tehran University of Medical Sciences, Iran

Introduction. Renal bone disease is still a great puzzle for nephrologists. It is a mixed disease with different characteristics.High turnover and low turnover bone diseases may all be responsible for reduced bone mineral density in hemodialysis (HD) patients. This can result in an increased fracture risk. The aim of this study was to determine prevalence of reduced bone density and its risk factors in a group of HD patients.
Methods. Eighty-one HD patients (older than 18 years old) who were on HD for at least one month were enrolled the study. Femoral neck and lumbar bone mass density (BMD) were measured by dual energy x-ray absorptiometry (DXA). The WHO criteria which are based on T-score measurement was applied for definition of osteopenia and osteoporosis.Serum calcium, phosphorus, alkaline phosphates and iPTH were measured at the

time ofbone densitometry.Body weight and BMI were measured. The body weight which was considered for statistical analysis, was the average of there post dialyses weights.
Results. Mean age of the patients was 53.7 ± 14.5 years and 45.6% of the patients were female. Mean of the dialysis duration was 45.7 ± 38.8 months. Twenty-four patients (29.6%) were diabetic. According to WHO criteria, 49% of the patients had osteopenia and 18.5% of them had osteoporosis. BMD had significant negative association with age. There was no significant correlation between serum Ca, Ph, iPTH levels, BMI, gender, dialysis duration, presence of DM and BMD.
Conclusions. Reduced bone density (74.7%) was common in our patients comparable to other studies. This increases fracture risk which may result in considerable morbidity. Also, association between low bone density and cardiovascular disease has been reported which should be sought in our future studies. In this regard, great effort must be done in prevention and treatment of bone disorders in ESRD patients.

P113

Acute Effects of Hemodialysis on Lung Volumes of Patients with End-Stage Renal Disease

Nassiri AA,[1] Hakemi MS,[2] Solouki M, Abolghasemi R

[1]Shahid Beheshti University of Medical Sciences, Iran
[2]Tehran University of Medical Sciences, Iran

Introduction. Impairment in the function of respiratory system can occur in end stage renal disease (ESRD) patients. Hemodialysis (HD) can also affect lung function by several mechanisms. The purpose of the present study was to determine acute effects of HD on spirometry findings of patients with ESRD.
Methods. Twenty six patients (older than 16 years) who were on HD for at least 3 months were enrolled the study. Exclusion criteria were previous history of pulmonary diseases, recent pulmonary infection and musculoskeletal disorders. Spirometry was done immediately before and after hemodialysis. FVC, FEV1and FEV1/FVC were measured. This test was done three times and the best value was chosen. Unfortunately, we were not able to assess carbon monoxide transfer factor (TLCO) for detection of pulmonary diffusing capacity.
Results. Male to female ratio was 1 and mean age of the patients was 56.9 ± 13.5 years. All patients were on HD three times a week (3.5-4 hours) using Fresenius 4008-B and polysulfone synthetic dialyzer membranes. Mean duration of HD was 64.1±47 months. Mean of the weight change between dialysis sessions was 2.9 ± 1.2 kg. Based on spirometry findings, mean of FVC was 82 ± 19% before HD and it changed to 89 ± 21% after HD (P = .019). Mean of FEV1 was 1.48 ± 0.71 L and 1.58 ± 0.74 L before and after HD, respectively (P = .062). Mean of FEV1/FVC was 89% ± 9% and 88% ± 10% before and after HD, respectively (P = .7). There was significant correlation between age and FEV1 before and after HD (P = .05).There was also significant correlation between age and FEV1/FVC before and after HD (P = .01).Gender was related to spirometry findings before HD and only FVC after HD. Weight change between dialysis sessions was not related to spirometric measurements (P > .05).
Conclusions. This study showed that HD did not adversely affect lung function in ESRD patients. In fact, FVC and FEV1 improved after acute HD and this change was significant in FVC.

P114

One-Year Survival of Hemodialysis Patients: A Multicenter Study

Nassiri AA, Daneshfar B, Nobakht Haghighi A

Shahid Beheshti University of Medical Sciences, Iran

Introduction. Although hemodialysis (HD) improves survival of ESRD patients, mortality rate of this population is still high. The purpose of this study was to evaluate one year mortality rate of patients undergoing HD in 4 hospitals affiliated to Shahid Beheshti University of Medical Sciences (SBMU), Tehran, Iran.
Methods. In a prospective cross sectional study, 172 patients undergoing HD in 4 hospitals of SBMU were enrolled and were followed for one year. Patients older than 15 years who were on HD for at least 3 months were entered the study. During one year follow up (F/U), hospitalization rate and duration, mortality rate and major causes of death in these patients were evaluated. Out of 172 patients, 99 (57.6%) had at least one comorbid disease. There were 72 cases of cardiovascular diseases (IHD, CHF, and CVA) and others consisted of respiratory diseases, systemic autoimmune diseases and malignancies.
Results. Mean age of the patients was 56.9 ± 16.4 years and 58.7% were male. The most common causes of ESRD were as follows; DM 26.1%, chronic glomerulonephritis 22.7%, hypertension 16.3%, others 12.2% and unknown 22.7%. Of them, 52.3% had been followed for at least 6 months by a nephrologist before starting dialysis. Mean level of Kt/V was 1.22 ± 0.17. Of the patients, 23.3% were hospitalized for mean days of 7.4 ± 4.2 per year. The most common causes of hospitalization were cardiovascular diseases (27.9%), infections (26.7%), vascular access problems and dialysis complications each in 13.9% of the patients. In one year F/U, 28 patients (16.3%) died. The most common cause of death was cardiovascular diseases (71.4%) followed by infections (21.4%). The mortality rate was significantly correlated with age, FBS level, presence of hypertension and comorbid diseases.

Conclusions. This study emphasized that cardiovascular disease is the most common cause of death in patients on HD. The presence of comorbid diseases is an increasingly common problem in dialysis patients and can affect patient survival. Comorbid diseases should be considered and treated accordingly.

P115

Prevalence of Methicillin-Resistant Staphylococcus Aureus in Hemodialysis Patients and Staffs in Isfahan

Seyrafian S, Mobasherizadeh S, Mortazavi M, Taheri S, Eshaghian A, Ghassami M, Emami Naini A

Isfahan University of Medical Sciences, Iran

Introduction. Dialysis patients are especially vulnerable to infections including methicillin-resistant Staphylococcus (MRSA). Previous studies showed that screening of hemodialysis patients for staphylococcal colonization is important to understand its epidemiology and to develop infection prevention measures and treatment strategies. MRSA prevalence in a study in 2007 was reported in 5.6% of hemodialysis patients. We assessed the prevalence of MRSA in hemodialysis center at Al-Zahra University Hospital in Isfahan.
Methods. In a cross-sectional study the prevalence of (MRSA) colonization in 43 chronic hemodialysis outpatients and in 21 staffs of the hemodialysis center was assessed. The samples were taken from nose and tip of the finger of all patients and personnel and incubated in a media containing 4% NaCl +6 g oxacillin + Muller Hinton agar, then E-Test was used to confirm MRSA. The use of antibiotics in previous 3 days, sex, age, and duration of dialysis or working in hemodialysis center were recorded.
Results. The mean age of patients and staffs were 53 ± 17 years and 38 ± 10 years respectively. 51% of patients and 57% of staffs were female. Length of dialysis time was 22± 19 months, and working for staffs was 43 ± 29 months. The prevalence of MRSA in patients and staffs was 3 (13%) and 3 (7.3%), respectively. By independent t test, there was no significant difference between age, sex, time on hemodialysis, time of working as personnel in hemodialysis, antibiotic usage in 3 days before, and positive culture for MRSA ($P > .05$).
Conclusions. Our data showed that the prevalence of MRSA in patients and personnel of hemodialysis is 13% and 7.3% respectively. That is more common than the previous reports, and needs a complete support and review of health standards to prevent the spread of these resistant bacteria. Also we recommend larger size studies in this field.

P116

Hypoalbuminemia Induces on Iron-Induced Oxidative Stress in Hemodialysis Patients

Abedi Azar S, Gorbani A, Jafari MR, Nakhjavani J, Estaghri R

Tabriz University of Medical Sciences, Iran

Introduction. Intravenous iron (IVIR) administration is widely used to treat anemia in chronic renal failure (CRF) patients and causes oxidative stress. There have been no enough studies investigating the relationship between the severity of iron-induced acute oxidative stress and serum albumin. Therefore, we wanted to investigate the relation between the severity of iron-induced acute oxidative stress and serum albumin level in hemodialysis patients.
Methods. A total of 56 patients with absolute iron deficiency were included to the study. Patients with acute inflammatory status, serum ferritin level >= 100 ng/mL, transferrin saturation >= 20%, hemoglobin level >= 12 g/dL or serum C-reactive protein (CRP) level >= 10 mg/dL were excluded. Serum serum thiol groups and malondialdehyde (MDA) level were used as an oxidative stress marker. After baseline sampling, 100 mg ferric sucrose was infused within 30 minutes. Blood samples were drawn to assess changes in oxidative stress marker at the end of the IVIR infusion and at 240 minutes. Patients with serum albumin level < 4 g/dL were defined as hypoalbuminemic and >= 4 g/dL as normoalbuminemic
Results. There were 26 hypoalbuminemic and 30 normoalbuminemic patients. Serum serum thiol groups and malondialdehyde (MDA) level increased in all patients after the administration of IVIR. The severity of iron-induced acute oxidative stress was more prominent in patients with a low serum albumin level. Serum albumin level and hemoglobin level were found as significant predictors of time-dependent changes in serum thiol groups and malondialdehyde (MDA) level.
Conclusions. This study demonstrated a negative interaction between iron-induced acute oxidative stress and serum albumin level in CRF patients. CRF patients with low serum albumin level are at greater risk for iron-induced acute oxidative stress.

P117

Successful Pregnancy in a Patient With Hemodialysis-Dependent End-Stage Renal Disease in Iran

Abedi Azar S

Tabriz University of Medical Sciences, Iran

Introduction. Pregnancy is rare in patients on chronic dialysis and about 2.2% of the female patients of childbearing age became pregnant over a 4-year period .Fetal risk of prematurity and growth retardation is high in pregnant dialysis patients. An increase in congenital anomalies is also documented in pregnancies on dialysis. However, the number of successful pregnancies in dialysis patients has improved over the years.
Methods. A 26-year-old woman HCV positive hemodialysis patient was discovered to have pregnancy at her 6th week of gestation. She was on hemodialysis for 3 years following preeclampsia and unsuccessful pregnancy. During the first few weeks of gestation, the hemodialysis frequency was increased to daily dialysis three & half hours until the end of pregnancy. Blood pressure was controlled every 20 minutes during dialysis sessions and Erythropoietin was administered with intravenous iron therapy to keep the patient's hemoglobin above 115 gm/L. dialysate sodium modelling were employed. The patient was dialyzed with a polysulphone membrane (1.4m 2) dialyzer and by using a standard bicarbonate solution. Standard unfractionated heparin was used for anticoagulation. Aspirin in a dosage of 100 mg daily was prescribed to decrease the risk of preeclmapsia. She received folic acid 10-15 mg/day, vitamin D 0.25 mcg/ day, and calcium carbonate 1.5 gm/day.Obstetric follow-up consisted of monitoring the fetal activity and growth, placental maturity and umbilical artery perfusion was performed every two weeks.
Results. Laboratory investigations revealed hemoglobin: 11.3g/L, urea: 98 mg/dL, serum creatinine: 8.8 mg/dL; creatinine clearance: 13mL/min, serum albumin: ranged between 3.6 g/dL and 4.6 g/dL, mean weekly Kt/V: of 9.6 ± 1.4, and urea reduction rates: 54.8 ± 29.4%. She was normotensive and on the 37th week of gestation, the patient had a cesarean section of live female weighing 2270-g baby. The patient had a completely uneventful postpartum course and the newborn baby was well.
Conclusions. Intensified dialysis regimens in daily dialysis schedule and attentive medical care results in a successful outcome of pregnancy and reduces the rate of prematurity and low birth weight in patients on hemodialysis.

P118

Assessment of Malnutrition in End-Stage Renal Disease Patients on Maintenance Hemodialysis

Fattahi F,[1] Soltani P,[2] Bagherani N,[2] Emami H[2]

[1]Immunology, Asthma and Allergy Research Institute, Tehran University of Medical Sciences, Iran
[2]Department of Hemodialysis, Vali-asr Hospital, Arak University of Medical Sciences, Iran

Introduction. In patients on maintenance hemodialysis (HD), malnutrition is frequent, associated with increased infection, poor wound healing, muscle wasting and increased mortality affects quality of life and is associated with an increased risk of death. We conducted this study to assess the nutritional status of ESRD patients on maintenance HD.
Methods. The study was performed in the hemodialysis unit at Vali-asr hospital of Arak among 119 patients underwent HD. They were evaluated for presence of malnutrition by anthropometric measurement including BMI (body mass index) and MUAC (mid upper arm circumference). BMI < 18.5 and/or MUAC (< 22 for Female, MUAC < 23 for male) were defined as malnutrition. The serum albumin, urea, creatinine, cholesterol and triglyceride of HD patients and the relationship with the anthropometric index were also determined.
Results. Malnutrition rate was 34.45% (41 cases) with the age range of 60-69 years old. Malnutrition diagnosis was determined by BMI index in 19 patients and MUAC index was used in other patients because the BMI wasn't a suitable index (eg, in patients with organ amputation). There was no association between blood parameters and presence of malnutrition. Hypoalbuminemia was found in moderately and severely malnourished patients. However, none of these parameters could reach statistical significance. Increased risk of malnutrition was significantly associated with older age (> 50 years) and inadequate dialysis dose. More patients with malnutrition hadn't enough knowledge about the nutritional status.
Conclusions. There should be periodical assessment of HD patients using anthropometric, clinical, biochemical, and dietary parameters for identifying malnourished patients and those at risk of malnutrition. Since poor nutritional status results in the morbidity and mortality, prevention and treatment of malnutrition in these patients is very important. There are a significant number of patients with poor dietary knowledge and practices so nutrition education and counseling of the patients and their families to meet the individual dietary needs is necessary.

P119

Transplant Outcome as Related to Prolonged Versus Short-Term Pretransplantation Dialysis

Roozbeh J, Pakfetrat M, Jalaeian H, Raees Jalali GA, Sagheb M, Behzadi S, Salehipour M, Nikeghbalian S, Salahi H, Bahador A, Malek-Hosseini SA

Shiraz University of Medical Sciences, Iran

Introduction. Dialysis is life saving for patients with irreversible renal disease. However, it is associated

with significant morbidity, a greater mortality than transplantation and is also expensive. Thus, transplantation is considered to be the treatment of choice for end-stage renal disease (ESRD). The aim of study was to determine whether the duration of chronic renal failure and hemodialysis before renal transplantation have any effect on one year survival of allograft function and whether longer duration of hemodialysis leads to unsatisfactory result as compared to shorter duration of dialysis.
Methods. Graft function was reviewed among 1000 renal allograft recipients in Shiraz organ transplant center. Patients were divided into two groups: Those who had hemodialysis for less than 3 months (group 1) versus those who have been dialyzed for more that 3 months (group 2). Graft failure was defined as either serum creatinine > 3 mg/dL and or return to dialysis.
Results. Statistical analysis showed a significantly lower creatinine level at 3 years after transplantation for group 1. There was no significant difference in mean creatinine levels at one-year post-op. The incidence of various complications and causes of graft failure were the same.
Conclusions. Our data is not in favor of the notion that advanced uremia causes successful engraftment. In fact, early transplantation eliminates the cost, complications, and inconvenience of dialysis, leading to proper rehabilitation and a better quality of life. Besides, prolonged uremia and dialysis in pediatric age group interferes with growth and appropriate body image. Such findings support the idea of earlier transplantation.

P120

Zinc Deficiency Among Dialysis Chronic Renal Failure Patients Undergoing Maintainance Hemodialysis

Roozbeh J, Pakfetrat M, Sharifian M, Behzadi S, Raees Jalali GA, Sagheb MM

Shiraz University of Medical Sciences, Iran

Introduction. Zinc has a wide spectrum of biological activities and its deficiency has been related to various dysfunctions and alternations of normal cell metabolism. Dialysis patients are supposed to be at risk of developing iron deficiency and trace element imbalances. To evaluate the levels of serum zinc in a group of adults with chronic renal failure (CRF) and its correlation with the duration of dialysis and other hematological and biochemical variables, we undertook this study.
Methods. In a prospective manner, 67 chronic renal failure patients receiving dialysis were enrolled in the study. Before the dialysis session, the biochemical and hematological parameters such as plasma zinc levels (measured by atomic absorption spectrophotometry), hematocrit, WBC, platelet, serum iron, and liver function enzymes were measured. Data analysis was performed by using SPSS 11.5.
Results. Patients had a mean age of 55.62 ± 15.32 years (range, 24 to 83) with male- female ratio of 1.16. Mean duration of dialysis was 33.91 ± 30.43 months (range, 1-180 months). Only 17.6% of patients receiving chronic hemodialysis had low serum zinc levels. Mean zinc level in zinc deficient subjects was 601.76 ± 158.39 microgr/L. No correlation was found between serum zinc levels and levels and the duration of dialysis (P = .25). In addition, no correlation was found between serum zinc and iron levels (P = .56), duration of dialysis (P = .25), ALT (P = .297), or AST (P = .297). The proportion of zinc deficient female individuals were higher than males (29% versus 8.3%; P = .29) In addition, zinc deficient females had significantly lower serum zinc levels than zinc deficient males (430.01± 26.210 versus 658.88 ± 50.854 microg/L; P = .02). No difference was found for mean WBC, Hb, platelet counts, and AST, ALT levels. Although zinc deficient individuals had shorter the duration of dialysis, it did not reach statistical significance. (24.66 ± 14.90 versus 36.00 ± 32.69 months; P = .24)
Conclusions. Zinc deficiency was not quit common as we speculated at the start of this survey. It is more common among women with CRF, on dialysis. It has no association with duration of dialysis or serum iron.

P121

Safety and Efficacy of Low Molecular Weight Heparins for Hemodialysis in Patients With End-Stage Renal Failure

Abedi Azar S, Eskandartash E, Hassasi R

Tabriz University of Medical Sciences, Iran

Introduction. Low molecular weight heparins (LWMH) are the preferred initial treatment for many thromboembolic disorders but are renally excreted and relatively contraindicated in patients with renal failure because of concerns of increased bleeding risks. The purpose of this study was to evaluate the safety and efficacy of LMWH compared with unfractionated heparin (UFH) for preventing thrombosis of the extracorporeal dialysis circuit.
Methods. In a cross over study 30 dialysis patients divided in two groups, one group received UFH for 12 consecutive dialysis sessions of four-hours duration then switched to LWMH (1 mg/kg), the other group received LWMH for 12 session then switched to UFH. The mean age and body-weight of the two groups were comparable. We measured lipid profile, platelet count, prothrombin time, Partial thrombplastine time, and KT/V at the beginning, changing the anti coagulation method and at the end of study. In all, a total of 720 HD sessions were monitored for clotting of blood lines/ dialyzers and bleeding from vascular access and other sites. The rate of complications and the results of lab

tests were compared.
Results. There was no significant difference in the mean of Lipoprotein A, High density lipoprotein, Triglyceride, PTT, PT in both groups. But mean of low density lipoprotein at after dialysis in patients underwent LWMH was significantly lower than mean of UFH group (P < .029). Mean of platelet in LWMH group was significantly higher than UFH group (P < .001). Mean of KT/V in LWMH received patients was significantly higher than UFH received patients (P < .001).
Conclusions. LMWH seem to be as safe as UFH in terms of bleeding complications and as effective as UFH in preventing extracorporeal circuit thrombosis. It prevents decrease of platelet count and cad positively affect on low density lipoprotein and Kt/V.

P122

Relation of Calcium–Phosphorus Product and Troponin T Values in Dialysis Patients

Bagheri N, Falaknazi K, Taziki O

Taleghani Hospital, Tehran, Iran

Introduction. Dialysis patients have higher Ca×P product and these group of patients are at increased risk of cardiovascular diseases. The aim of this study was to see if there is a significant association between calcium Phosphorus product (CPP) and initial troponin-T values in our hemodialysis patients.
Methods. A cross sectional study was performed on patients who have been on hemodialysis atleast since 3 months ago. Concomitant troponin T and creatine kinase isoenzymes were measured. The most recent calcium and phosphorous values were also abstracted.
Results. There were 80 patients with a mean age of 62 ± 5 years. Median creatine kinase value was 184 U/L, mean CPP was 47.66, and median initial troponin T value was 0.08 mg/dL. The elevated tropnin levels (> 0.1 mg/dL) were seen in 51% of the patients. The CPP was higher than 55 in 21% of the patients. When comparing the troponin values with the CPP, significant association was noted (P < .05). Troponin level was higher in patients with CPP > 55 (67% versus 33%).
Conclusions. Based on previous studies both elevated CPP and troponin-T values are associated with increased cardiovascular mortality. We have found a correlation between these 2 values in hemodialysis patients.

P123

Relation Between Troponin-I and Major Cardiac Event in Hemodialysis Patients

Falaknazi K, Taziki O, Baghei N

Ayatollah Taleghani Hospital, Tehran, Iran

Introduction. Elevated serum concentration of cardiac troponin I is a highly sensitive and specific marker of myocardial damage. Patients with chronic renal failure treated by hemodialysis often have increased serum troponin I levels without evidence of acute myocardial ischemia. The significance of an elevated troponin level in this setting is unclear.
Methods. We identified all chronic dialysis patients presenting over 1 year in Ayatollah Taleghani hospital who also had at least one cardiac troponin I level determination. We evaluated presenting complaints of patients, risk factors for cardiac diseases, troponin level, and major cardiae events (MCE; Occurrence of cardiovascular death, myocardial infarction, de novo heart failure or coronary revascularization) within 1 year in 80 hemodialysis patients.
Results. Fifteen patients (20%) experienced a major cardiac event. Chest pain was documented in only 34% (n = 27) of the patients. Incidence of cardiac events was higher in patients with chest pain. The rate of major cardiac event was significantly lower in patients with serum cardiac troponin level of < 0.1mg/dL than patients with increased level of troponin I.
Conclusions. Based on previous and our study troponin I concentration seems to be a good predictor for occurrence of major cardiac event in hemodialysis patients.

P124

Oral Carnitine Supplementation Improves Dyslipidemia in Hemodialysis Patients

Emami-Naini A,[1] Sadeghi M,[2] Mortazavi M[3]

[1]Isfahan University of Medical Sciences, Department of Nephrology
[2]Isfahan Cardiovascular Research Center
[3]Al-Zahra University Hospital, Department of Nephrology

Introduction. Carnitine deficiency is a common finding in chronic dialysis patients that results in altered metabolism of fatty acids and subsequently development of dyslipidemia. The results of previous studies testing the effects of carnitine supplementation on lipid profile are conflicting. This study was conducted to evaluate the effect of oral carnitine supplementation on lipid profile of adult hemodialysis (HD) patients.
Methods. A total of 30 patients of both sexes who were on maintenance HD were enrolled. Patients were ordered to use carnitine tablets 250 mg (Carnitine, Sigma-Tau, Milan, Italy) three times a day for eight weeks. Serum lipid profiles of participants were compared before and after the intervention period. Weekly call visits were performed for any adverse effects of treatment.
Results. The mean values of total Cholesterol (189.8 ± 36.8 versus 176.6 ± 31.2 mg/dL), triglyceride (209.5 ± 64.7 versus 186.8 ± 54.1 mg/dL) and LDL-cholesterol

(116.7 ± 30.1 versus 106.0 ± 26.3 mg/dL) significantly decreased after the intervention but the difference for HDL-cholesterol (33.4 ± 9.9 versus 34.3 ± 7.6 mg/dL) was not statistically significant. None of patients was forced to drop out of the study due to side effects of treatment.
Conclusions. An oral dose of 750 mg per day of L-carnitine is able to improve lipid profile in HD patients. Further long-term studies with adequate sample size are needed to define the population of patients who would benefit more from carnitine therapy, and to define the optimal dose and the most efficient route of administration.

P125

The Effect of Intradialytic Exercise on Blood Pressure, Dialysis Efficacy, Hemoglobin Level and Serum Phosphate

Shahidi S, Falahi MJ, Farajzadegan Z

Isfahan University of Medical Sciences, Iran

Introduction. Despite the benefits of exercise for ESRD patients, they are often inactive. There are some evidences that showed intradialytic exercise increases dialysis efficacy and phosphate removal. This study examines the impact of intradialytic exercise on dialysis efficacy, serum phosphate, blood pressure control and hemoglobin level.
Methods. In this clinical trial, 14 patients (age, 23 to 72 years) on hemodialysis (HD) (0.5 to 15 years), after excluding contraindication, underwent an eight week exercise program in which they pedaled a bicycle at sub maximal workload. Total duration of exercise was one hour in the first two hours of HD. Patients were divided in two groups. Group A: two episodes of 30 minute exercise with 30 minute resting interval. Group B: 6 episodes of 10 minute exercise with 10 minute resting interval. Predialysis resting blood pressure, URR, KT/V, hemoglobin level, serum calcium and phosphate were measured initially, at the end of fourth week and eighth week of program. The dose of antihypertensive drugs and phosphate binder was changed.
Results. Two patients discontinued the program (one at the end of first week due to ankle arthritis and the other due to myocardial infarction). In the remaining these results were obtained: spKT/V despite 19% increase at the first month and 20% at the end of program did not reach the significance (P = .056). The mean serum phosphate decreased 0.12 mmol/L (0.38 mg/dL) and mean hemoglobin was increased 0.6mg/dL but neither reached significance. Mean systolic blood pressure was decreased from 135 mm Hg ± 15 to 130 mm Hg ± 13 (5.4 mm Hg decreased) that was significant (P = .015). There was no significant difference between two groups except the dose of phosphate binder at the end of the first month and the end of study.
Conclusions. One hour intradialytic exercise can cause modest reduction in systolic blood pressure. It can cause significant clinical increase in spKT/V and minimal reduction in serum phosphate and hemoglobin level. There is no difference between two exercise protocols examined in this study. But large controlled studies are needed to establish the definite benefits of intradialytic exercise and relative advantages of different exercise protocols.

P126

Seroprevalence of Human T Lymphocyte Virus I/II in Hemodialysis Patients and Blood Donors in Urmia

Rostamzadeh- Khameneh Z

Urmia University of Medical Sciences

Introduction. Human T lymphocyte virus (HTLV) is a virus from retroviridae family which is presented as the cause of T cell leukemia, spastic Paraparesis and tissue necrotizing lymphadenitis. It is mainly transmitted by contaminated blood products. Blood recipients such as thalassemia, hemophilia or hemodialysis patients are at a high risk of infection to this virus. However, immunodeficiency in hemodialysis patients increases this risk. The aim of this study is to survey the seroprevalence of HTLV in hemodialysis patients and blood donors, and to analyze the effectiveness of each risk factor.
Methods. In this descriptive cross-sectional study, first data was collected about demographic features such as age, sex and the frequency of blood transfusion through a year in hemodialysis patients and blood donors (as control group) of Urmia, Iran in 2006. Blood serum was evaluated serologically in both of two groups by enzyme-linked immunosorbent assay (ELISA) for HTLV I /II and finally all collected data was analyzed by descriptive and chi-square tests by means of SPSS software version 11.5.
Results. On hundred and fourteen hemodialysis patients and 2046 blood donors was evaluated and there were 65 men (57%) and 49 women (42.9%) in hemodialysis group. Also there were 1910 (93.4%) men and 136 women (6.6%) among healthy blood donors. Mean age of hemodialysis patients was 45 years old. Three persons of 114 hemodialysis patients were seropositive for HTLV (prevalence of 2.63%), which two of them were female and one was male. Among all blood donors, 1997 persons (97.6%) were seronegative for HTLV and 49 persons (2.4%) were seropositive in ELISA serologic laboratory test and positive cases was confirmed by western blot. Finally in this group, total seroprevalence of HTLV was calculated 0.34%.
Conclusions. Because we do not perform blood

products screening in our region, blood recipients are at a high risk of HTLV infection. More transfusion times and immunodeficiency in hemodialysis patients have increased HTLV incidence in this group, so screening for HTLV in high risk groups suggested in this study.

P127

Oral Hygiene and Periodontal Status in Hemodialysis Patients With Chronic Renal Failure in Qazvin Province, Iran

Hamissi J

Qazvin University of Medical Sciences

Introduction. Periodontal disease is a group of inflammatory disease that affects the supporting tissues of the dentition. The aim of this study was to evaluate periodontal condition on hemodialysis (HD) patients in Qazvin province, Iran.
Methods. In this cross-sectional study, the periodontal condition of 94 patients undergoing HD therapy was examined using the plaque index, gingival index and CPITN index. Subjects were distributed into seven age groups: 10 to 19, 20 to 29, 30 to 39, 40 to 49, 50 to 59, 60 to 69, and 70 to 79 years.
Results. Poor oral health status was observed in all patients. There was a significant relationship between the CPITN scores and age and dialysis duration. All patients had high gingival index, probing depth, bleeding on probing and attachment loss. However, a very small number of HD patients were in need for complex periodontal treatments.
Conclusions. HD patients are characterized by pulp obliteration, gingival and periodontal disease. This study reveals that all HD patients should be given oral hygiene education as a priority.

P128

Antitetanus Toxoid Antibody Titer in Chronic Hemodialysis Patients

Sagheb MM, Sajadi S

Shiraz Medical School, Nephrology Urology Research Unit, Iran

Introduction. Patients with end stage renal disease have higher incidence of infective Diseases that is thought to be related to impaired immune system. To determine the Anti Tetanus IgG level in Iranian hemodialysis patients with end stage renal disease and its association with: sex ,age ,hemoglobin ,albumin ,duration of dialysis ,number of dialysis per week, Erythropoietin or iron supplement as Venofer injection , body mass index (BMI) ,underlying renal disorder
Methods. we conducted a cross sectional study on a total of 108 Iranian hemodialysis patients with end stage renal disorder patients, and 36 people in control group, matched with patient group .The patients didn't receive any Anti Tetanus vaccine or immunoglobulin in the previous year. The serum anti-tetanus IgG levels were measured by ELISA method. We also considered the above contributing factors
Results. As a result we understand that 74.3% of patients have unprotected Anti Tetanus IgG level comparing with 52.8%o control group. We noticed that patients with longer duration of hemodialysis have lower anti-tetanus IgG level (P = .051). None of the other contributing factors seems to be affecting immunity.
Conclusions. We conclude that in our patients, there was a significant difference in the anti-tetanus IgG level between hemodialysis patients and control group especially in chronic hemodialysis patients.

P129

Peritoneal Dialysis, a Single Center Five-Year Experience

Donyadideh-Ahrab E,[1] Zamen-Millani N,[1] Ardalan MR,[2] Zolali N[2]

[1]Young Researcher Club
[2]Tabriz University of Medical Sciences

Introduction. Peritoneal dialysis (PD) is a known renal replacement modality for end stage renal disease (ESRD) patients. Its continuity and ability to removing middle size molecules, and independency of patients are its advantages on hemodialysis (HD). Recently growing of ESRD patients and shortage of replacement facilities demanding more familiarity and knowledge about this modality.
Methods. PD was started in our center since 2002, in this retrospective study we report our 5 year experience on PD. We defined positive selection when PD starting as the first modality, negative selection means transfer from HD to PD. Patients' age, causes of renal failure, catheter and patients' survival, catheter related problems and patients' outcome including death, transfer to HD, and transplantation have been studied here.
Results. In a five year period (1381-1386), 130 ESRD patients entered to PD program. In this study we excluded 17 patients with insufficient data, remaining 113 patients (58 M/55 F, 12-88 years) were studied. Diabetic nephropathy and glomerulonephritis were major causes of ESRD. Sixty two patients (55%) were positively selected, and 51 patients (45%) had negative selection. After a mean period of 11.3 ± 6.8 months, 14 patients (12.4%) received renal transplantation. Twenty seven patients died (23 %) after a mean period of 7.2 ± 6.2 months on PD, Two patients (1.7%) died due to catheter related problems; remaining causes of death were PD unrelated including cardiovascular problems, and cerebro-vascular accidents.Eight patients (7.7%) transferred to HD

(6.2 ± 6.1 months). Remaining 64 patients (57%) still are on this modality (15.2 ± 11monts).
Conclusions. Peritoneal dialysis is a safe and effective modality and a majority of ESRD patients could receive it. It is still a young modality in our country. Familiarity with it would be effective for combating ever growing ESRD patients.

P130

Fungal Peritonitis After Chemical Peritonitis in Continuous Ambulatory Peritoneal Dialysis: Report of 5 Cases

Karimi S,[1] Mortazavi M,[2] Ghassami M,[3] Eshaghian A[3]

[1]PD center of Al-Zahra Hospital, Iran
[2]Department of Nephrology of Al-Zahra Hospital, Esfahan, Iran
[3]Facalty of Medicine, Esfahan University of Medical Sciences, Iran

Introduction. Peritonitis remains one of the major complications of peritoneal dialysis and results in reduced technique survival and increased patient morbidity and mortality. Fungal peritonitis is a serious complication of continuous ambulatory peritoneal dialysis being associated with significant morbidity and mortality.
Methods. We observed all of the patients with chemical peritonitis at the peritoneal dialysis unit of Al-Zahra center in Esfahan, and followed up them by culture.
Results. We report 5 patients that had chemical peritonitis and were treated by changing their solution of peritoneal dialysis, all of them involved fungal peritonitis.
Conclusions. It is possible that early presentation of fungal peritonitis be with chemical peritonitis.

P131

Study of complications of continuous ambulatory peritoneal dialysis in A-Zahra hospital- Esfahan and the impact of demographic factors in 1385

Mortazavi M,[1] Seyrafian S,[1] Taheri S,[1] Karimi S,[2] Eshaghian A,[3] Ghassami M[3]

[1]Nephrology Research Center of Esfahan University of Medical ScienceS, Iran
[2]Peritoneal Dialysis Center of Al-Zahra hospital, Esfahan University of Medical Sciences, Iran
[3]Facaulty of Medicine, Esfahan University of Medical Sciences

Introduction. Peritonitis remains one of the major complications of peritoneal dialysis (PD) and results in reduced technique survival and increased patient morbidity and mortality. . The present study was undertaken to characterize the Continous Ambulatory Peritoneal Dialysis (CAPD) patients in April 2006 to April 2007 by their demographic and co-morbid conditions and relate this to the complications (surgical and nonsurgical) trends.
Methods. In an observational descriptive cross-sectional descriptive study, medical records of 118 CAPD patients seen over April 2006 to April 2007 in Al-Zahra hospital in Esfahan- Iran were studied retrospectively. The data was analyzed by one way ANOVA and t-test with SPSS 12.
Results. There were 71 (60.7%) males and 46 (39.3%) females; their age ranged from 14 to 91 years (mean age 53 ± 15.7 years). The usage length of CAPD was 1-60 months (11.7 ± 13.9). Diabetes was the commonest cause of ESRD seen in 63 (53.4%) followed by hypertention (18.8%), unknown etiology (10.3%), glomerolonephritis (2.6%), congenital (4.3%) and others (10.3%). 11 patient was died during the time of study. The mean duration of CAPD was 11.7 ± 13.9 (range: 1-60 month), and 42 patient had history of haemodialysis. Thirty patients had history of at least one episode of peritonitis. 1.4% of patient was in high, 60.5% in medium, and 28.1% was in low socioeconomic. 79.6% was urban, 14.2% was suburban, and 6.2% was rural. Complication of catheter is peritonitis (42.3%), catheter migration (5%), hernia (4.2%), inadequec (1.6%), leak (2.5%), tunnel infection (1.6%), hemoperitonitis (0.8%), exit of Dacron (2.5%), peritoneal rupture (0.8%), and pulmonary edema (0.8%). Some of the patients experienced moe than one complication. There was not difference between peritonitis and type of collected microoganisms. There was not significant relationship between number of peritonitis with sex (P = .512), socioeconomic state (P = .6), family support (P = .132), degree of relative that assisted in CAPD (P = .189), patient education (P = .151), residence status (P = .456), cause of renal failure (P = .183), continuity of PD (P = .819), history of HD (P = .502) and mortality (P = .28). There was no relationship between age and number of peritonitis.
Conclusions. As the use of CAPD increase in our country, it is important to assess the complications of PD, and its causing factors.

P132

Study of Mortality of Continuous Ambulatory Peritoneal Dialysis in Al-Zahra Hospital, Esfahan, and the Impact of Demographic Factors

Mortazavi M,[1] Seyrafian S,[1] Taheri S,[1] Karimi S,[2] Eshaghian A,[3] Ghassami M[3]

[1]Nephrology Research Center of Esfahan University of Medical Sciences, Iran
[2]Peritoneal Dialysis Center of Al-Zahra hospital, Esfahan University of Medical Sciences, Iran
[3]Facaulty of Medicine, Esfahan University of Medical Sciences

Introduction. End-stage renal disease (ESRD), due to its high morbidity and mortality as well as social and financial implications, is a major public health problem. Outcome depends not only on different modalities of treatment like hemodialysis and peritoneal dialysis, but also on existing co-morbidities, age, duration on dialysis, supportive therapies and infection control strategies. Thus, a detailed study becomes necessary to improve health care delivery, provide medical care and to establish a geographical reference. The present study was undertaken to characterize the Continous Ambulatory Peritoneal Dialysis (CAPD) patients by their demographic and co-morbid conditions and relate this to the morbidity and mortality trends.
Methods. The medical records of 118 CAPD patients seen over 1385 in A-Zahra hospital in Esfahan, Iran, were studied retrospectively. The data was analysed by SPSS 12.
Results. There were 71 (60.7%) males and 46 (39.3%) females; their age ranged from 14 to 91 years (mean age 53 ± 15.7 years). The usage length of CAPD was 1-60 months (11.7 ± 13.9). Diabetes was the commonest cause of ESRD seen in 63 (53.4%) followed by hypertention, and unknown etiology. 11 patient was died during the year of 1385.The leading cause of death was cardiovascular in 7 (5.9%) followed by pulmonary death in 2 (1.7%). Other causes of death included stroke and complexity of CNS with pulmonary disease. There is no relationship between sex, place of resistant, family support, economic status, length of CAPD using and cause of ESRD with mortality. Our data have shown a significant reduction of death in the patient that not treated with haemodialysis before ($P = .025$). There is a significant relationship between education in 2 groups ($P = .02$). Number of peritonitis ($P < .001$, 95% CI, 1.2 to 0.41) was also related to death of our patients.
Conclusions. Initiation of peritoneal dialysis will likely preserve residual kidney function to a greater extent than initiation of hemodialysis. As preservation of endogenous kidney function is an important goal in patients with end-stage kidney disease, this outcome may contribute to the choice of modality. This can result the lower mortality of the patients that have not history of HD in our patient. Objective parameters guide the initiation of dialysis to maximize survival, reduce morbidity and mortality. The study provides a reference data and will hopefully be helpful in improving the medical care in our territory.

P133

Effect of Serum Zinc on Immune Response to Hepatitis B Vaccination in Patients on Dialysis

Nouri-Majelan N

Shaheed Sadoughi University of Medical Sciences, Iran

Introduction. Zinc deficiency causes abnormalities of immune response. In chronic hemodialysis (HD) and continues ambulatory peritoneal dialysis (CAPD) patients, impaired immune responses to vaccination have been reported. Therefore, we performed a study to determine correlation between serum zinc level and immune response to hepatitis B vaccination.
Methods. A cross-sectional study of 95 CRF dialyzed patients (70 HD and 25 CAPD), (63 male and 32 female) with three dose regimens of vaccination against HBV was performed.
Results. Four months after vaccination, there were 34 (36%) patients with sufficient HBs Antibody response (HBs Ab ≥ 10 mU/mL) and 61 (64%) patients with insufficient HBs antibody (HBs Ab < 10mU/mL). The mean of serum zinc level was 23.35 ± 3.87 micmol/L (13.20 to 33 micmol/L). The mean of serum zinc concentration was significantly higher in patients with sufficient HBs antibody level than patients with insufficient HBs antibody level (24.94 ± 4.17 versus 22.15 ± 3.46, $P = .005$).In logistic regression analysis, independent variables that correlated with sufficient HBs Ab level ≥ 10 mU/mL were higher mean serum zinc level ($P = .006$) and female gender ($P = .048$). Factors found to be insignificant included dialysis type, age ≥ 50 years versus age < 50, diabetes mellitus as a cause of ESRD, serum creatinin and albumin.
Conclusions. We conclude that the failure to response to HBV vaccination is related to a significantly low level of serum zinc. However, clinical trial studies should be performed in order to establish this effect.

P134

The Effects of Previous Intraperitoneal Adhesions on the Outcome of Peritoneal Dialysis Catheters

Keshvari A, Nouri Taromlo MK

Tehran University of Medical Sciences, Iran

Introduction. Peritoneal Dialysis (PD) in patients with the history of previous abdominal operation is doubtful because of the presence of intraperitoneal adhesions. The purpose of the present study is to compare the outcome of PD catheters which inserted using a laparoscopic technique in patients with and patients without intraperitoneal adhesions.
Methods. A data bank of patients who underwent a laparoscopic implantation of PD catheters from March 2004 to June 2007 was reviewed. Follow-Up was between 1 to 36 months (mean follow-up, 14.6 months). Overall and revision-free survival of catheters was estimated using the method of Kaplan and Meier.
Results. 180 consecutivelaparoscopic procedures resulted in 179 successful catheters implantations in 169 patients. One patine with extensive adhesions could not

be implanted. There was history of previous abdominal surgery in 85 (47%) of the 179 procedures, but only 23 (27%) of them have intraperitoneal adhesions. Four patines without history of previous abdominal surgery have intraperitoneal adhesions. The final comparison was done between two groups, 27 patients with and 152 patients without intraperitoneal adhesions. The two groups did not show any significant difference in 1&2 years overall and revision-free survival of catheters, mechanical and infectious rates and surgical revision rate.
Conclusions. There is no significant difference between the outcome of PD catheters in patients with and patients without intraperitoneal adhesions. Laparoscopy is the only way for evaluation of intraperitoneal adhesions and the best technique of implantation of PD catheters in the patients with history of previous abdominal operations.

P135

Outcome Evaluation of Implanted Peritoneal Catheter in Patients With End-Stage Renal Disease

Beigi AA, KhanSoltani S, Masoudpour H, Karimi S

General Surgery Department, Alzahra Hospital, Iran

Introduction. Continuous ambulatory peritoneal dialysis (CAPD) is an accepted treatment modality for patients with end-stage renal failure around the world. The purpose of this study is to evaluate the effectiveness, complication of this method in Iran and to assess the reasons of giving up this way.
Methods. This prospective descriptive study includes 155 patients whom were operated with peritoneal dialysis catheter from March 2000 to February 2007 in Isfahan. Data analysis was performed in order to compare our experience with that of other centers around the world. Subjects were adjusted for sort of catheter and surgical technique.
Results. Out of 155 patients, 99 (6.2%) were males and 56 (36.1%) were females. Mean age of subjects was 55.4 years (16-85 years). Diabetes and hypertension were the most common cause of nephropathy. 85 (55%) of patients preferred PD, initially. 29 of subjects (13%) were treated with PD by increasing the awareness and gaining more information about the advantages of PD following a period of hemodialysis (HD). The number of patients were treated with PD caused by hemodialysis incompliancy, inappropriate accessibility to vessels for hemodialysis and severe ischemic disease were 20 (13%), 17 (11%) and 4 (6%), respectively. Duration of therapy was from 2 weeks to 5.5 years. Most common complications were peritonitis (19%) and catheter malfunction (10%). Fungi were the most common cause of peritonitis. Over about 7-year period, 33 (21.3%) patients died which were four (2.5%) following peritonitis. Catheters were removed in 35 patients (22.5%) as a result of kidney transplant, resistant peritonitis, patients' incompliancy, ineffective PD, abdominal hernia, dialysate leaks including hydrothorax.
Conclusions. From the point of outcome, the complications were not dramatically different from western countries. With appropriate training, we suggest that CAPD is an optimal method for treating ESRD even in developing countries though previous articles which have introduced it as a non-practical method.

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Descriptive Evaluation of Peritoneal Dialysis Center of Al-Zahra Hospital, Esfahan, Islamic Republic of Iran

Taheri S,[1] Seyrafian S,[1] Mortazavi M,[1] Karimi S,[2] Eshaghian A,[3] Ghassami M,[3] Afzali P,[3] Soltanpour N[3]

[1]Nephrology Research Center of Esfahan University of Medical Sciences
[2]Peritoneal Dialysis Center of A-Zahra Hospital, Esfahan University of Medical Sciences
[3]Facaulty of Medicine, Rafsanjan University of Medical Sciences, Iran

Introduction. Quality indicators for dialysis care vary across countries and regions. The aim of this study is to evaluate the adequacy of continuous ambulatory peritoneal dialysis (CAPD) and epidemiologic characteristics in the Alzahra Peritoneal Dialysis Center during the 5 currently years.
Methods. In an observational study, we evaluate 82 patient files from the first year of establishment of the center. The population under study was all of the patients in Alzahra Peritoneal Dialysis Center during the 5 years. Information was collected with previous records. Our information sheet contains age, sex, previous diseas, Kt/V, first and end Calcium, Phosphorus, Fast Blood Sugar (FBS), Hemoglobine, Hematocrite, Albumine, HDL, LDL, Cholestrol, Triglyceride. Then this information was analyzed by SPSS version 12 software with paired t-test.
Results. Among 82 patients 53.7% was male. Mean age was 48 ± 17 (9 to 80). The mean of Kt/V was 2.1 ± 0.5 (1.29 to 3.28) until Shahrivar 1385. The mean was 2.57 ± 0.72 (1.26 to 4.54) in 1384; and was 2.09 ± 0.2 (1.95 to 2.24) in 1383. The first and end evaluation of FBS, cholestrol, triglyceride, LDL, HDL, calcium, phosphorus, albomin, hemoglobine is described in the table below. First evaluation End evaluation FBS 105 ± 44 136 ± 68 cholestrol 185 ± 43 196 ± 48 triglyceride 153 ± 71 2.8 ± 162 LDL 125 ± 93 114 ± 39 HDL 38 ± 11 38 ± 9 calcium 8.6 ± 0.7 8.8 ± 0.7 phosphorus 6 ± 7.4 4.4 ± 1.1 albomin 4 ± 0.83 4 ± 0.7 hemoglobine 9.6 ± 2.3 12.1 ± 13.8 The difference between first and end FBS and triglyceride

was significant (P < .001, 95% CI, -47.9 to -15.6 for FBS; P = .008, 95% CI, - 97.9 to -15.7 for triglyceride).
Conclusions. This study reveals that dialysis adequacy is approporiate in our center. The study provides a reference data and will hopefully be helpful in improving the medical care in our territory.

P137

A Case of Pyogenic Granuloma, Localized to the Exite Site of Peritoneal Catheter

Seyrafian S,[1] Karimi S,[2] Eshaghian A[3]

[1]Nephrology Research Center of Esfahan University of Medical Sciences, Iran
[2]Peritoneal Dialysis Center of Al-Zahra Hospital, Esfahan, Iran
[3]Facaulty of Medicine, Esfahan University of Medical Sciences, Iran

Introduction. Pyogenic granuloma is a benign proliferative vascular tumour of the skin and mucous membrane that often follows a minor injury or infection. The tumour is usually solitary and preferentially located on the fingers, hands, forearms and face. It presents as a small erythematous papule that enlarges and often becomes pedunculated. Pyogenic granulomas bleed easily on minor trauma. Infection and ulceration with accompanying purulent exsudate may occur.
Methods. All of the patients were observed carefully for complications of peritoneal dialysis and catheter.
Results. A case of pyogenic granuloma with the unusual features on exite site of peritoneal dialysis catheter in a patient with a history of continuous ambulatory peritoneal dialysis is presented.
Conclusions. This is the first report of pyogenic granuloma on exite site of peritoneal dialysis catheter. Its treatment is the simple surgical removal and the control of the traumatic and infectious influential factors.

P138

Comparison of Quality of Life (QOL) Between Peritoneal Dialysis (PD) and Hemodialysis (HD) in Iranian Population in Tehran, 2005-2007

Kasirlou M,[1] Asadi Noghabi AA,[2] Dehghan Nayeri N[2]

[1]KOA/Baxter, Iran
[2]Tehran University, Iran

Introduction. By fast growing of patients with end stage renal disease (ESRD) and lack of financial resources, integrated care concept is adverted and due to reasons like better quality of life (QOL), peritoneal dialysis introduced to patients to be chosen. QOL is one of the important aspects of life which should be compared in two dialysis modalities for confirming the correctness of the idea. The aim of this study was to compare the QOL in patients who underwent peritoneal dialysis (PD) with other patients underwent hemodialysis (HD).
Methods. In a cross sectional study, 180 dialysis patients ranging 18 to 60 years old were randomly selected among Tehran hospitals between 2005 and 2007 and divided into two PD (n = 60) and HD (n = 120) groups and different components of patients' QOL were evaluated by SF-36 questionnaire.
Results. Male to female ratio in HD and PD groups was 1.04 and 1.12, respectively. PD group had significantly higher mean of bodily pain (P < .0001), physical functioning (P = .029), physical role (P = .018), and energy (P = .004) component scores than HD group. However, the mean scores of emotional role and social functioning were similar between PD and HD groups. Totally, there was no statistically significant in the mean score of general health between the two groups.
Conclusions. By having the better quality of life in PD than HD patients; we could acknowledge that the idea of placing patients on PD would have good results on patients' lifestyle and patients will benefit of this therapy. The finding supports the Dekker, Lameire and Gokal research and ideas and ignores Wasserfallen.

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Peritoneal Dialysis a Good Companion of Iranian Model of Renal Transplantation

Ardalan MR,[1] Zolali N,[1] Sandgol H,[2] Nouri N,[3] Rahimian A,[3] Ghafari A,[4] Etemadi J,[1] Najafi I[5]

[1]Tabriz University of Medical Sciences-Department of Nephrology, Iran
[2]Zahedan University of Medical Sciences- Nephrology Department, Iran
[3]Yazd University of Medical Sciences-Department of Nephrology, Iran
[4]Uromieh University of Medical Sciences - Department of Nephrology, Iran
[5]Tehran University of Medical Sciences- Nephrology Unit, Iran

Introduction. Peritoneal dialysis (PD) has proven to be as effective treatment as Hemodialysis (HD). Better quality of life, lower coast, fewer complications are advantages of PD on HD. The risk of death is lower for PD patients during the first two years of dialysis. Iranian model of kidney transplantation is a regulated living-unrelated kidney donation that eliminated transplant waiting list. Here we analyzed the chance of transplantation in a PD population from Iran.
Methods. We retrospectively analyzed data from a population of patients enrolled to continuous ambulatory

peritoneal dialysis (CAPD) in different Iranian PD centers between November 2002 and July 2006. We excluded those bellow 12 years, and those who transferred from HD or started PD after renal transplant failure (negative selections). We analyzed the mean time and percentage of transplantation in the remaining patient who started PD as the first renal replacement therapy (positively selected).

Results. From a total number of 441 patients on CAPD, after exclusion of pediatric and negatively selected patients, remaining 364 patients (198 M/ 166 F, 44.1 ± 18.5 years) were positively selected population. From this patients, 24.2% or 88/364 patients (40 M/ 48 F, 30.9 ± 9.7 years) received renal transplantation within a mean period of 9.6 ± 3.9 months.

Conclusions. We concluded that it is appealing to advocate PD as the initial renal replacement therapy in Iran, because majority of eligible patients are able to receive renal transplantation within two years of PD, which is a period of better quality of life and lower complications.

P140

Hypophosphatemic Encephalopathy in a Patient on CAPD

Ardalan MR, Mohajel Shoja MA, Etemadi J, Zolali N, Oskoei R

Tabriz University of Medical Sciences, Peritoneal Dialysis Unit, Iran

Introduction. Hypophosphatemia is a rare condition in ESRD patients. We report here a CAPD patient who developed severe hypophosphatemia with confusion and neuromuscular symptoms at presentation.There are sporadic case reports of hypophosphatemia in infants on CAPD and rarely after parentral nutrition in adults on CAPD. As far as we now this is the first report out of the above-mentioned conditions

Methods. Case: A 61-year-old female who was on CAPD was referred to hospital because of generalized muscle weakness and confusion. She was anuric had a ten years history of hemodialysis that after access failure changed to CAPD 11 month ago. Diabetic nephropathy was the cause of ESRD and received 20-unit insulin daily.

Results. During the last month before admission, she had a poor protein uptake and her major dietary regimen was high carbohydrate and low protein. On admission physical examination revealed; blood pressure: 100/80 mmHg, pulse rate: 60/minute, T; 37C, respiratory rate: 18/minute. She was disoriented, confused, with dysarthria, Dysphagia, dysphonia, ptosis and inability to walk. She had generalized muscle weakness that was more pronounced on lower extremities. Deep tendon reflexes were reduced. Laboratory findings revealed: hemoglubine: 13 mg/dL, platlete 338000/ cubic millimeter, Blood sugar; 376 mg/dL, Serum creatinin: 6.2 mg/dL, BUN; 50 mg/dL, K: 3.5 meq/L, Na: 132 meq/L, Brain CT scan was normal. Free serum calcium 1.46 mmol/L (1.13 to 1.3), phosphore; 0.8 mg/dL (2.5 to 4). Alkalan phosphatase; 394, Serum PTH; 16.2 pg/dL, Radiography of hand revealed vessel calcification, Arterial blood gas analysis: PH; 7.25, bicarbonate; 16, PCO2; 59 mmHg. Serum Albumin: 2.1 g/dL. Serum protein electrophoresis was normal. Left ventricular ejection fraction (LVEF) was 25%. Nsogastric tube was inserted and Potassium phosphate and milk was started her serum phosphor rose to 2.2 mg/dL within three days, she became oriented and her condition completely resolved and LVEF rose to 40%.

Conclusions. We hypothesized that in this patient a combination of diabetes, malnutrition, low protein, low phosphate, and high carbohydrate diet combined with glucose based dialysis solution and concomitant insulin administration lead to a major cellular shifting of phosphor, this is very similar to hypophosphatemia of re-feeding syndrome.

P141

Unexplained Pulmonary Hypertension in Patients on Continuous Ambulatory Peritoneal Dialysis

Etemadi J, Ardalan MR, Mohajel Shoja MA, Tofan M, Noshad H

Tabriz University of Medical Sciences, Department of Nephrology, Iran

Introduction. There is a scare of information about the incidence PH among the patient under peritoneal dialysis (PD).The aim of this study was to evaluate the incidence of unexplained PH among patients with end stage renal disease (ESRD) under CAPD.

Methods. In this study those patient with more than six month on CAPD were included at first. Those patients with high probability of secondary pulmonary hypertension were excluded, including those with; pulmonary disease, heart failure, collagen vascular disease .pulmonary arterial pressure (PAP) was measured by Doppler echocardiography. As a control group, we measured the PAP in five ESRD patients that were not on any dialysis modality. PH was defined as PAP greater than 35 mm Hg.

Results. From a total of 16 measurements (M 9/ F 7, age: 37.1 ± 13.9 years) among the CAPD patients, PH was found in only one patients (6.2%), mean value of ejection fraction and PAP in this patients were: 54.4 ± 2.6%, and 27.6 ± 6.4 mm Hg in succeeding, mean value of hemoglobin was 10.3 ± 1.2 g/dL in this patients. In control group (4 M/1F), none of them had PH and mean value of PAP was 29.6 ± 3.6 mm Hg.

Conclusions. As far as we know this is the largest study of PAP that has been done in PD patients. This study

showed a lower incidence of PH in CAPD patients. This is in contrast to high incidence of PH among the patients under Hemodialysis. We speculate that lake of Arteriovenous fistula, lower level of Endothelin -1 and better control of anemia are the reasons for a lower PAP in PD patients, this area needs future investigation.

P142

A Comparison of Sympathetic Skin Response in Patients on Peritoneal Dialysis and Hemodialysis

Ardalan MR, Mohajel Shoja MA, Ghafari A, Ayramlo H, Etemadi J, Noshad H, Zolali N, Oskoie R

Tabriz University of Medical Sciences, Department of Nephrology, Iran

Introduction. The pathogenesis of Uremic polyneuropathy and Autonomic nervous system (ANS) dysfunction are complex and multi-factorial. It is thought to be due to one or more uremic toxins that finally could induce axonal degeneration and demyelinization. It is anticipated that highly permeable peritoneal membrane could remove the uremic toxins more effectively.
Methods. Study group consisted 30 stable patients on CAPD (M 21/F 9) and 30 stable HD patients (M 18/ F 12) all reciving adequate dialysis. None of them were diabetic, had any concomitant Neurologic problem or receiving anticolinergic or sympathomimetic medications. SSR study performed by Toennies-Neuroscreen machine. Latency was measured with the sensitivity of 1000 millisecond from the onset of stimuli to the onset of skin response. The amplitude was measured in millivolts. Because of the wide normal range and habituation we only considered the lake of response as abnormal. To evaluate the effete of residual renal function on SSR statutes, 24 hours urine volume was measured in all patients in each group
Results. The mean age for HD patients was 49.8 ± 13 years, with mean duration of 24 ± 20 months on HD. SSR was detected in only 4 HD patients (13.3%). In PD group mean age of patients and mean duration on PD were 41 ± 19 years and 15 ± 8.8 months. SSR was detectable in 22 PD patients (73.3%).and there was a significant difference between the presences of SSR in this two groups ($P < .001$). Multivariate regression analysis revealed that there was a strong relation between type of dialysis and status of SSR. Age, sex, duration of dialysis and amount of urine volume in each groups had not a meaningful effect on the SSR.
Conclusions. This study showed that presence of Sympathetic nervous system dysfunction in both HD and PD patients. In this regard HD patients are more affected than PD patients. We hypothesized that better removal of uremic neurotoxins by peritoneal membrane creates such a difference.

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Acute Pancreatitis in Peritoneal Dialysis

Ardalan MR, Etemadi J, Noshad H, Mohajel Shoja MA, Zolali N, Oskoie R

Tabriz University of Medical Sciences, Department of Nephrology, Iran

Introduction. Current literature suggests that patients on peritoneal dialysis are at higher risk of acute pancreatitis and increasing use of peritoneal dialysis are accompanied by occasional reports of this complication. Direct contact of glucose and calcium containing fluid with pancreatic tissue are additional risk factors in these patients. Here we report a rare presentation of acute pancreatitis in a CAPD patient.
Methods. Case: A-30 year-old male patient presented with abdominal pain, tenderness, nausea and vomiting that was gradually started since 12 days ago. On admission BP:110/80, T;37, Respiratory rate 22/minute, He was on peritoneal dialysis for ten months after a long period of renal failure due to familial Mediterranean fever (FMF) amyloidosis. Effluent fluid was completely clear, total white blood cell count was 350/µl, with 90%polymorphonuclear and 20/µL red blood cells. Hgb: 8.5 mg/dL, WBC; 19400/µL, p serum phosphore level: 6.3 mg/dL, serum calcium level was 9 mg/dL. Culture of effluent fluid was negative despite of this intra-peritoneal (IP) antibiotic therapy with cefazolin and gentamycin started. Ultrasound study revealed two small stone within the gallbladder. Head and body of the pancreas were normal but tail of pancreas was unable to studied, CT scan revealed a suspicious collection at the edge of pancreas. Direct billirubine level: 0.1 mg/dL, indirect serum billirubin level; 0.6 mg/dL, ALT; 10 IU/L, AST; 17 IU/L, serum glucose was 135 mg/dL, serum amylase and serum lipase level were within the normal range.
Results. Despite of partial improvement of abdominal pain and tenderness at the evening of eight day of admission his general condition suddenly worsened and effluent fluid became completely bloody. He died two days after despite of intensive medical and surgical interventions. There was a widespread hemorrhagic pancreatitis with the involvement of the vessels of transverse colon with localized hemathoma.
Conclusions. This case highlighted that when we are dealing with culture negative peritonitis, acute pancreatitis should be considered as an important possibility. The diagnosis of acute pancreatitis in CAPD patients is difficult. Its symptoms and signs are similar to those of dialysis-associated peritonitis. Elevated serum and effluent amylase are diagnostic but localized nature of pancreatic and washing effect of peritoneal dialysis could decrease these concentrations and continuous presence of intra-abdominal fluid could also obscure the imaging signs of acute pancreatitis.