

O101

Early Detection of Patients at High Risk for Acute Kidney Injury During Disasters: Development of a Scoring System Based on Bam Earthquake Experience

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Introduction. Early detection of patients prone for acute kidney injury (AKI) in disasters can reduce the number of AKI by prophylactic hydration therapy. Since not enough fluids might be available to offer preventive treatment to all victims, it is important to detect patients at risk for AKI. For the first time in the literature the present study uses biochemical findings of victims of the Bam earthquake in 2003 to design an algorithm for early detection of patients at high risk for AKI.

Methods. Questionnaires were sent to different university hospitals which admitted the bulk of Bam earthquake victims. Factors showing univariate correlation with AKI, defined as at least two values of serum creatinine above 1.6mg/dL were introduced into a stepwise multiple regression for prediction of AKI.

Results. All of the ten biochemical factors [creatinine phosphokinase (CPK), lactate dehydrogenase (LDH), glutamic-oxaloacetic transaminase (SGOT), uric acid, calcium (Ca), phosphorus (P), sodium (Na), potassium (K), white blood cell count (WBC), platelet count (Plt)] included in the study were significantly correlated to serum creatinine on day 3 ($P < .05$). In the approach using multiple regression analysis, however, only CPK, LDH, uric acid, potassium remained statistically significant. Applying this regression analysis, an AKI score of more than 20.000 for the following equation was highly predictive for development of AKI: $\text{AKI score} = 0.45\text{CPK} + 2.5\text{LDH} + 2700\text{K} + 2000 \text{uric acid} - 14000$. The sensitivity and specificity of this index for AKI was 96.6% and 95.7%, respectively. A rule of thumb to assess the absence of risk for AKI was also developed, using univariate RoC analysis: if on day 1 serum creatinine

was lower than 2 mg/dL, LDH was lower than 2000 and serum uric acid was lower than 6, the risk for development of AKI was virtually zero.

Conclusions. We propose two efficient patient scores to predict development of AKI in rhabdomyolized patients. These scores can be calculated very easily at an early stage after a disaster, prophylactic hydration therapy in crushed earthquake victims could be started early in patients at risk.

O102

Prognostic Risk Factors of ARF in ICU-Patients

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Introduction. Early diagnosis of ARF and detection of its risk factors during ICU admission and ranking patients by the APACHE II score may help to improve prognosis. We designed this study to determine outcome and mortality risk related to ARF in critically ill patients.

Methods. In this retrospective, cross sectional study, data of all ICU files of the Shahid-Mohammadi hospital, Bandar-Abbas, Iran, from years 2005 and 2006, were analyzed. ARF was diagnosed based on abnormal Cr level or two-fold or more than 0.5 mg/dL rises in proportion to the first day. APACHE II score was calculated for each patient. T and chi-square tests were used to compare the groups.

Results. Seventy-three ARF patients admitted to the ICU within 6 months. The mean age was 44.6 ± 20.27 in the ARF patients and 37.21 ± 21.30 yr in patients without ARF (P -value: 0.013). 52 out of 95 dead patients in this study had ARF. There was a statistically significant difference in the mean APACHE II score between two groups (25.35 ± 12.94 in the ARF patients and 14.53 ± 7.10 in patients without ARF). The mean APACHE II score was significantly higher in dead patients. There was also a statistically significant difference in the mean GCS between two groups. The mean WBC, RBC and Hb did not have any statistically significant differences between two groups but the mean of K and Na were significantly higher and Plt was lower in the ARF group.

Conclusions. ARF can increase mortality in the ICU admitted patients. Low GCS in the first day of admission, thrombocytopenia, hyperkalemia and hypernatremia can be the risk factors of ARF. APACHE II score can be used as prognostic factor in ICU patients.

O103

Prevalence of Acute Renal Failure in PICU Based on RIFLE Scoring System

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Introduction. Acute renal failure is a common complication in pediatric intensive care units (PICUs). The prevalence of this complication is 4.5% and 20% in France and US, respectively.

Methods. This is a descriptive prospective study conducted between 2005 and 2006 on 121 patients admitted to PICU of Mofid Children's Hospital. We evaluated our patients with demographic data, biochemistry and glomerular filtration rate and categorized them based on RIFLE, PRISM, PIM and PELOD scoring systems. We also use Regression analysis test, t test, chi-square, ANOVA and post hoc test for statistic analysis.

Results. We evaluated 121 pediatric patients, 53.72% were male and the rest of them were female. The prevalence of acute renal failure in our patients was 36.4%. Based upon the RIFLE scoring system 19.8% of our patients were in risk group, 8.3% were in injury group and 8.3% were in the other three groups. We found out a significant correlation between Patients' glomerular filtration rate and diastolic blood pressure, Platelet level, PH, PaCo₂ and Pa O₂ and serum bicarbonate (P = .038, P = .037, P = .044, P = .008, P = .004, P = .004, respectively). There was not any correlation between GFR and age, sex and admission time urine volume. We showed that RIFLE is more sensitive than the other scoring systems in prediction of complications and mortality in PICU. We also demonstrated that the incidence of renal failure could be increased in patients who admitted to PICU due to respiratory failure, neurological diseases and neurosurgical disorders.

Conclusions. We concluded that the incidence of acute renal failure in PICU centers is significantly increased and we might be able to prevent of this complication with closed observation of the patients for blood pressure, oxygenation, bicarbonate, and thrombocyte level.

O104

Twelve Years of Experience with Continous Ambulatory Peritoneal Dialysis in IRAN

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Introduction. CAPD is the youngest renal replacement therapy in Iran with 12 years experience comparing hemodialysis of 43 and renal transplant of 39 years. There

were a lot of obstacles in progress and development of CAPD in Iran. Hence the number of active CAPD patients in the end of the first 5 years (1995 to 2001) was only 77 all over the country, which with a help of peculiar programming it reached to the level of 1050 patients (pts) now. In this study we are going to present how this improvement has happened.

Methods. We designed a national registry system including a comprehensive set of database including more than 1640 pts and analyzed it with spss 13 software in two different period of recruitment of pts, early (1995 to 2001) & late (2002 till now).

Results. Comparison of outcome in early and late groups showed that the rate of transfer to HD, transplantation, death, desire to change the modality and also, complications like infection (peritonitis and exit site), catheter malfunction, inadequate dialysis decreased while the number of active PD patients has increased dramatically. The most important reasons for this improvement and the way we achieved it are as follow: 1-Lack of information regarding CAPD in physicians and paramedics, solved by multiple educational courses. 2- Lack of information of pts, solved by consultation and education program of pts (44 % acceptance of CAPD). 3- Lack of public awareness, solved by mass media educational program. 4- Poor catheter outcomes, solved by changing catheter insertion technique from conventional to laparoscopic method which leads to decrease catheter malfunction from 56% to 20 %. 5- CAPD drops out due to high rate of peritonitis, solved by changing connectology system from L2 to L3 which lead to decrease peritonitis rate from 1.95 % to 0.79% per pts years). 6-poor experience of medical teams, solved by the nature of learning curve.

Conclusions. CAPD in Iran like the other countries all over the world is logical applicable, acceptable and a suitable mode of renal replacement therapy, but only with a good and multiapproach programming.

O105

Predictors of Acute Renal Failure Following Cardiac Surgery

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Introduction. Acute renal failure (ARF) following cardiac surgery occurs in 1 to 10% of patients. Patients who develop ARF have higher rates of mortality. This study was undertaken to estimate the role of perioperative variables in predicting of post cardiac surgery ARF.

Methods. We studied a cohort of 398 adult patients who underwent cardiac surgery at our institution between February 1, 2004 and February 1, 2006. Adult patients (> 18 yr) who were scheduled for cardiac valvular surgery, coronary artery bypass grafting (CABG) and both, with or without cardiopulmonary bypass (CPB) were included. Exclusion criteria were death within two days of operation (n = 8), incomplete patient data, and preexisting renal dysfunction and dialysis requirement or a baseline serum creatinine > 4 mg/dL. Age, sex, left ventricular ejection fraction, diabetes, preoperative, presence of proteinuria (on dipstick), type of surgery (CABG, valvular, combined CABG and valvular), use of CPB and duration of surgery were recorded. A logistic regression analysis was performed to assess independent contribution of variables in the risk of ARF.

Results. A binary logistic regression revealed age was an independent predictor of ARF ($P < .05$). When both all variables were included in a multinomial logistic regression model, preoperative proteinuria independently predicted ARF (odds ratio = 3.91; 95% CI, 1.55 to 9.91; $P = .004$).

Conclusions. Our results revealed that special considerations should be given to elderly and patients with proteinuria when managing post cardiac surgery ARF.

O106

Hyponatremia in Hospitalized Patients

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Introduction. Hyponatremia is the most common electrolyte disorder in the hospitalized patients. The incidence and prevalence of hyponatremia varies widely depending on the clinical circumstances. Recently safety and efficacy of AVP receptor antagonists have been established in the clinical trials that provide a new therapeutic options in hyponatremic patients. In order to evaluate the prevalence of hyponatremia and efficacy of treatment modalities, a study carried out in Firouzgar general hospital.

Methods. The study was cross sectional. From 13 May to 27 August 2007 every request for serum sodium in hospital checked by one 9180 Electrolyte Analyzer and reported. On the basis of serum Sodium results, the prevalence of hyponatremia (serum Na < 135) was calculated every day. Then medical charts of hyponatremic patients reviewed.

Results. The prevalence of hyponatremia was 14.9% per day and severe hyponatremia in 0.5% of samples (serum sodium < 125). During this period there were 75 hyponatremic patients with the mean age of 56.3 ± 20.3 years. 31% of hyponatremic group were from elderly (age > 65 years). The male to female ratio was 2/1. Of

75 patients, 46 hyponatremic patients were admitted in internal medicine ward. The most common causes of admission were: sepsis in 29.8%, underlying malignancy in 28.1%, central nervous system problem in 22.8%, and congestive heart failure in 10.5% and end stage renal disease in 8.8% patients. In 17 (22%) of patients ,hyponatremia were unnoticed without any request for second check and 28 (37.3%) of patients discharged with low serum sodium level in spite of traditional treatment modalities including hypertonic infusions, Furosemide, high protein formula and water deprivation.

Conclusions. Hyponatremia is a common electrolyte disorder in our hospitalized patients. In large group of our patients, hyponatremia were not corrected effectively. It seems that new AVP antagonist drugs could be a promise to better management of our hyponatremic patients.

O201

TBase—A Web-Based Electronic Patient Record in Clinical Practice

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Introduction. Organ transplantation is the combined effort of several highly specialized groups of experts where a bulk of information about the patients coming from various sources in a variety of formats has to be exchanged. The requirements of this exchange and those of hospital administrators, insurance providers and scientists are to be met by an ideal data management system an Electronic Patient Record (EPR) which complies with all these needs.

Methods. We have implemented an EPR based on a professional server-based relational database (Microsoft SQL Server) with a completely flexible data-structure containing all types of data including documents in free-text and images. The flexible structure of the database allows an easy adaptation to unexpected or changing user-requirements without intervention by the system administrator. The only software required for the user is the regular Internet Explorer. This means that our implementation of an EPR can be made available to every authorized physician everywhere without any restrictions by location, hard or additional software. Maximum security is maintained by a firewall system, extensive user verifications, and individual access restrictions. The Graphical User Interface is designed as simple as possible with a navigation bar at the left hand side of the screen for administrative purposes, creating hospital discharge letters automatically, and a tabular bar upside for the different content masks, e.g. transplantation, laboratory, examination, diagnosis, and follow-up data.

Results. At present, data of about 2.500 transplant

recipients and patients on the waiting-list have been entered into our system at Campus Charité Mitte. The former paper-based patient records have been completely inserted into the new EPR system. By using intuitive and self-explaining user interfaces and HTML techniques such as hyperlinks the necessary amount of training is reduced to a minimum. Most of data are included automatically via interfaces in the background several times per day. These are basic administrative patient and laboratory data, findings of pathology, diagnoses, and further examination results of other clinical departments. Additionally, TBase comprises links to the PACS system of radiology and the VMScope – the virtual microscopy.

Conclusions. TBase is a very successful EPR which is used in the daily clinical routine and for research purposes. At present, it is installed at 18 transplant centres in Germany and we prepare a direct interface to Eurotransplant—the common coordination centre for donor organs of middle Europe. The huge and valid amount of data in TBase yields the first basis for the Open European Nephrology Science Centre - OpEN.SC. This is a metadata repository and research portal which collects and structures medical data of involved nephrological clinics in Europe.

O202

The Open European Nephrology Science Center: An International Research Resource Centre for Kidney Diseases

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Introduction. In order to improve the availability and presentation of heterogenic biomedical and clinical data for research activity different centers are established e.g. in the United States the National Center for Research Resources and in Germany the Centers for Research Information. The Open European Nephrology Science Center (OpEN.SC) in Berlin, Germany is a metadata repository for clinical data supported by the German Research Foundation. The purposes are (I) to allow access to research relevant data without boundaries of domain, hospitals and clinical departments, (II) to improve and initiate the scientific collaboration, (III) to enforce pattern analysis in heterogenic data, and (IV) to improve quality management.

Methods. The OpEN.SC is a metadata repository that

receives research related data from different resources such as department information systems. From an abstract point of view, the platform lies as repository above clinical and department information systems and based on a modern and flexible Service Orientated Architecture to ensure adaptability and scalability. To store the data and implement the software architecture the Oracle Database 10g and Application Server are used. As a first data resource the web based electronic patient record system TBase© was affiliated to store case metadata linked with whole slide images (WSI) in the repository.

Results. Currently data of more than 2500 patients with more than 17 million data entries are available in the OpEN.SC repository. Specialized retrieval system guarantees prevention against misuse of these high-value data and by thus protects the interests of clinical partners. WSI's are offered to get an impression about the morphology of the disease. After releasing requested data by the head of the department of that special data resource, the inquiring scientist is allowed to review the case in detail.

Conclusions. For current research activities, it is essential to retrieve data without boundaries. The OpEN.SC is both a software platform for research related data and an organizational structure with an installed Medical Advisory Board responsible for the strategy and rules of data usage in OpEN.SC. The availability of digitalized research related data allows the utilization not only for scientific projects but also for quality management and E-learning.

O203

Risk Factors of Acute Renal Failure in Cardiac Surgery

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Introduction. There are some factors that cause acute renal failure (ARF) after cardiac surgery. However, maybe these factors have confounding effects. The aim of this study is to consider the potential predictor variables and other clinically relevant variables in order to find the risk factors of ARF in this condition.

Methods. A retrospective cohort study of 689 consecutive patients (501 males, 188 females) undergoing cardiac surgery was performed. The cardiac surgery consisted of coronary artery bypass grafting [CABG (90%)] and valvular and others surgery (10%). ARF was defined as patients with a postoperative serum creatinine (Cr) level greater than 1.5 mg/dL and increasing of more than 30% of serum Cr after 48 hours of surgery compared with preoperative Serum Cr level. Multivariable stepwise linear regression analysis was performed to adjust simultaneously for potential confounding variables and to identify independent variables associated with

increasing of serum Cr level after cardiac surgery.

Results. The mean age was 57.93 years (19-90 years) and 75% of patients had age above 50 years. The frequency of diabetes, hypertension, preoperative serum Cr level greater than 1.5 mg/mL and cardiac arrhythmia were 28, 37, 4.8 and 6 percent, respectively. There were 93% of patients who underwent on-pump and the mean duration of time on-pump, operation time and aortic cross clamp time were 46.59 17.78 (3 to 254), 59.60 20.74 (10 to 260) and 24.81 11.27 minutes, respectively. The mean of preoperative and postoperative serum Cr level were 1.08 0.6 (0.6 to 16) and 1.25 0.59 (0.6 to 10.4) mg/dL, respectively. 47 patients (6.8%) developed ARF (5% in CABG group versus 13% other cardiac surgery; $P = .033$). The incidence of ARF was significantly higher in the patients with age above 50 years than below 50 (8.1% versus 2.9%; $P = .019$). In the final multivariable linear regression model, 68% of patients were included (471 of 689) and independent variables that correlated with increasing serum Cr level after surgery were male gender ($P < 0.001$), older patients ($P < 0.001$), hypertension ($P = .047$), higher preoperative serum Cr level ($P < 0.001$) and longer duration on-pump time ($P = .047$). Factors entered into the multiple liner model but found to be insignificant included type of surgery (CABG versus others), diabetes, smoking, cardiac arrhythmia, low cardiac output, duration of operation and aortic cross clamp time and body mass index.

Conclusions. This study suggests that preoperative renal dysfunction in old patients, especially on long time on-pump is highly susceptible to ARF after cardiac surgery.

O204

Cardiac and Renal Involvement in Dippers and Nondippers With Newly Diagnosed Essential Hypertension

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Introduction. Normal sleep decreases blood pressure (BP) by 10% to 15% in both normotensive and hypertensive individuals, referred to as BP “dipping.” Those who decrease their BP by less than 10% are considered to be “Nondippers.” The aim of this study was to investigate whether patients with newly (≤ 1 year) diagnosed, never-treated hypertension have renal function or cardiac abnormalities according to their dipper and non-dipper status.

Methods. A total of 35 non-diabetic, newly diagnosed (≤ 1 year), and never-treated stages 1 and 2 hypertensive patients were recruited among the outpatients of a Nephrology clinic. Patients underwent ambulatory blood pressure monitoring (ABPM) and were classified as either dippers or nondippers (25 and 10, respectively).

All patients underwent M-mode echocardiography in order to detect the presence or absence of left ventricular hypertrophy (LVH), left ventricular mass index (LVMI), both corrected for body surface area, and wall thickness (as a markers of cardiac damage). In order to determine the renal function, an Inulin clearance test corrected for body surface area was performed for all of them (to determine the glomerular filtration rate).

Results. There was no difference according to the age, sex, body mass index, smoking, and hyperlipidemia between dippers and nondippers. In addition we did not find significant differences between the 2 groups as regards the echocardiographic left ventricular dimensions on regarding LVH, LVMI or wall thickness. On the other hand, we found a significant difference in Inulin clearance between dippers and non-dippers (113.9 mL/min for dippers and 92.6 mL/min for non-dippers, $P < .01$).

Conclusions. Our data suggest that in the early phases of hypertension, there is no association between blunted nocturnal BP fall and cardiac damage, but a significant decline in renal function in the non-dipping status. This finding may have therapeutic implications.

O301

A Comparison Study of Quality of Life Between Hemodialysis and Peritoneal Dialysis Patients in Taleghani and Imam Khomeini Hospitals in Urmia

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Introduction. Quality of life (QOL) assessment in patients on chronic haemodialysis (HD) or peritoneal dialysis (PD) has only rarely been carried out with the SF36 questionnaire.

Methods. All chronic HD and PD patients in the Taleghani and Imam Khomeini hospital in Urmia were requested to fill in the validated with the SF36 questionnaire QOL questionnaire. The SF36, a short-form QoL scoring system with 36 items, is a self-administered questionnaire that was constructed to fill the gap between much more lengthy surveys and relatively coarse single-item measures of the QoL which are compressed into eight multi-item scales: (1) physical functioning; (2) role; (3) bodily pain; (4) general; (5) vitality (6) social functioning (7) role-emotional and (8) mental health allowing computation of a predicted QOL values, to be compared.

Results. A total of 130 questionnaires distributed to chronic HD patients and 39 questionnaires distributed to chronic PD patients. The two groups were similar in age, gender and duration of dialysis treatment. Mean QOL was rated at 56.5 for HD and 38.1 for PD, respectively. Results of the five dimensions were not similar in both

groups, and were better in HD groups. The highest scores were recorded for physical functioning, with 75% in HD and 43% in PD patients reporting low limitation, and the lowest scores for role-emotional, with 36.9 in HD and 36.5 in PD patients reporting severe limitation. Total score in chronic HD patients was 56.5% and in chronic PD patients was 38.1%. The difference between them was significant ($P < .05$). Experiencing pain/discomfort (for HD and PD) or anxiety/depression (for PD) had the highest impact on QOL.

Conclusions. The QOL was nearly diminished in HD and PD patients equally. The questionnaire was well accepted and performed well. Improvement could be achievable in both groups if pain/discomfort and anxiety/depression could be more effectively treated. More research is needed to assess whether interventions to improve quality of life lower these risks among haemodialysis and peritoneal dialysis patients.

O302

Comparison of Outcome and Quality of Life: Hemodialysis Versus Peritoneal Dialysis Patients

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Introduction. Ever since the Peritoneal Dialysis (PD) introduced as a renal replacement therapy, efficacy and complications of it, were compared with Hemodialysis (HD). The aim of this study was determination of PD efficacy and outcomes versus HD in our region.

Methods. We compared 60 patients on PD with 60 matched patients on HD in Tabriz Sina Hospital during 2004-2006. Patients' and technique survival, and patients' quality of life were compared by means of health related quality of life questionnaire (GHQ-28).

Results. In our study, there was not significant difference in mean age and duration of dialysis between patients on PD and HD. Survival of diabetic patients was better in HD than PD but in non-diabetic patients survival wasn't different between HD and PD. Among patients on PD, diabetics had higher mortality rate. Also, mortality rate of diabetics on PD was 25% higher than the patients on HD. But in non-diabetic patients mortality on PD was 3% higher than on HD which was not reliable. In all four axes of questionnaire including psychophysical dysfunction, stress & sleep disorder, social dysfunction and major depression, PD patients had lower scores than HD patients (P values respectively; $< .001$, $< .001$, $.002$, $< .001$) that means patients on PD had better quality of life than HD.

Conclusions. In this study, patients' and technique survival and patients' QOL on PD was better than HD. Despite this finding, survival of diabetic patients

was better in HD than PD and mortality was higher in diabetics on PD.

O303

Predictors of Patient Survival in Continuous Ambulatory Peritoneal Dialysis: A Retrospective Cohort Study of Two CAPD Centers in Tehran, Iran

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Introduction. Although hemodialysis and peritoneal dialysis allow ESRD patients to continue staying alive, their quality of life and life expectancy are still much lower than general population of similar age. Efforts in finding the predictors of mortality in these groups of patients have been less effective in improving their survival. Our study was designed to recognize influencing factors on patient survival in two Iranian CAPD centers (Shariati hospital and Shafa PD Research center) in Tehran.

Methods. Two hundreds and eighty two (282) CAPD patients were studied in a prospective cohort from March 1995 up to February 2006. We extracted the important demographic, clinical and laboratory parameters from the questionnaires/charts in the files and classified them in five major groups (demographic data, physical parameters after starting PD, laboratory findings, data related to peritoneum and solute clearance and finally medications). Then we analyzed them using descriptive and inferential statistic methods (such as Cox regression).

Results. Hundred and thirty (130) patients (46%) have been followed up in Shariati hospital and 152 (54%) in Shafa center. Mean age at start was 50.7 ± 15.98 (range, 14 to 82) years. Fifty three percent were male vs. 47% female. Mean follow up time was 18.4 ± 14.53 (range, 3 to 104) months. Based on questionnaires in the file, 33% were fully appropriate, 48% appropriate and 19% fully inappropriate for peritoneal dialysis and 57% have been selected positively versus 43% of negatively selected patients. Thirty three percent were diabetic and 27% had one or more other comorbidities. Mean total weekly Cr clearance and Kt/V were 80.37 ± 28.85 L/w/1.73m² and 2.13 ± 0.59 respectively (75% of patients were above recommended levels ie, > 60 L and > 1.7 U). Mean nPCR was 0.78 ± 0.19 g/kg/d and mean serum albumin was 3.57 ± 0.49 . PET results showed 2 % of patients are Low, 17% Low Average, 56% High Average and 25% High transporters. Thirty-two percent and 69% of patients had experienced at least one episode of exit

site infection and peritonitis, respectively. At the end of study 44% of patients were alive and on PD, 21% died, 23% transferred to HD, 10% received transplantation and 2% had recovery of renal function. Median patient survival was 53.53 months with 1, 2, 3, 4 and 5 year survival of 88 %, 74%, 65%, 54% and 46%, respectively. Regarding technique survival, median survival was 47.13 months with 1, 2, 3, 4 and 5 year survival of 89 %, 72 %, 56 %, 39 % and 32 %, respectively. Univariate analysis of parameters in each group showed age, level of education, diabetes, smoking, comorbidities, history of hemodialysis, type of selection, appropriateness, specialty of surgeon, type of catheter, Body Mass Index (BMI), appetite level, edema, systolic and diastolic blood pressure, urine volume, white blood cell (WBC) count, Serum Iron, TIBC, Transferrin saturation, serum Cr, Sodium, Potassium, Calcium, Calcium x Phosphorus product, PTH level, total cholesterol, Triglyceride and albumin, residual renal function, total weekly Cr clearance and Kt/V, nPCR had significant correlation with mortality. But in multivariate analysis only age, diastolic blood pressure, edema, serum PTH, albumin and nPCR were independent predictors of patient survival.

Conclusions. This study showed that demographic, clinical and laboratory data, patient and technique survival in these two centers were approximately similar to other international studies. Age, diastolic blood pressure, edema, serum PTH, albumin and nPCR were only independent predictors of patient survival in our multivariate group analysis.

O304

Evaluation of Serum Zink Level in Hemodialysis Patients in Razi Hospital, Rasht, Iran

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Introduction. Zink is one of the important trace elements for human growth and body's biological functions. This trace element is the important cofactor of many enzymes. Serum variation of this trace element is clinically important and should be taken into consideration, because fluctuation of this element, especially its deficiency, causes many clinical manifestations (anemia, growth retardation, impotence, ...), in human and also especially in dialysis patients, these manifestations alongside with metabolic and endocrine uremic disturbances, could become exacerbate and even poorly respond to specific treatment (s). The aim of this study was to determine the serum level of zink in hemodialysis patients (HD), and to evaluate the association of patient's characteristics on its serum level.

Methods. This survey is an observational-analytical cross-sectional study. The sample population was 80

cases of HD patients who were chosen randomly from HD patients of the dialysis center of Razi hospital in Rasht, Gilan province, IRAN (38 male, and 42 female). Mean age of patients was 56.43 years old (17-83 years old). The serum zink concentration of these patients was determined by the colorimetric assay before dialysis. Correlation tests for evaluation of associations, and anova analysis for differences were used.

Results. The mean average concentration of serum zink in these patients were 91.55 ± 16.62 g/dL. The prevalence of zink deficiency was 22.5%. Their normal range was 75 to 120 that were no significant relationships between HD conditions, age, and sex of patients with the serum level of zink. But there was a significant relationship between the economic status and serum zink level (ANOVA analysis $P = .003$).

Conclusions. Upon these findings, we concluded that there is a direct correlation between the economic status and serum zink level. Because positive income could provide an adequate amount of animal protein, which is the main source of zink in human's nutritional regimen. So, we recommend assaying serum zink level in HD patients, which their clinical illnesses respond poorly to medical management (eg, anemia to erythropoietine therapy and growth retardation).

O305

Study of Nutritional State of Hemodialysis Patients of Ekbatan Center in 2005

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Introduction. Malnutrition is one of the common problems in dialysis patients. This can be due to low consumption of food, increasing in calory loss and protein catabolism. Malnutrition has a significant effect on mortality rate and time of hospitalization. Early diagnosis of malnutrition can improve the quality of life and life expectancy in hemodialysis patients.

Methods. In this study all of hemodialysis patients in dialysis center of Ekbatan hospital with at least 3 months of dialysis history enrolled. Questionnaire about patient dieting was completed in two peroidicity with 6 months interval. Measurment of anthropometric particulars: weight, height, BMI, mid-arm circumference and biochemical data (bicarbonate, cholestrol, albumin, BUN, Cr, Kt/V) was done.

Results. In this research distributive study plenty of malnutrition in relation of BMI was 21.1% in first step. Low calory intake found in 80.3% of patients in first step, and in 76.3% in second step. Measurement of mid arm circumference could show 56.6% and 55.3% malnutrition in first and second step, respectively. There was not any

significant relation between acidosis, serum albumin, Cr, Kt/V, cholesterol and malnutrition.

Conclusions. Prevalence of malnutrition in this study was greater than expected in comparison with other studies according to mid arm circumference. Although Cr, albumin, HCO_3 and calloxy intake were lower in malnourished group but it was not significant. It could be due to low number of patients. Frequency of malnutrition is higher according to mid arm circumference rather than BMI. This can be explained by higher body water by measurement of BMI, which can be evaluated by bioimpedance studies. We suggest periodic evaluation of nutritional state of hemodialysis patients and routine use of mid arm circumference for this aim.

O306

The Effect of Hoemodialysis on Pulmonary Function Tests and Respiratory Symptoms in Patients With Chronic Renal Failure

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Introduction. In the present study the effect of hemodialysis on pulmonary function tests (PFT) and respiratory symptoms of chronic renal failure (CRF) patients was studied.

Methods. Respiratory symptoms of 18 CRF patients were recorded using a questionnaire, before, in the middle and the end of dialysis. PFT values of patients were also measured three phases. In addition, baseline PFT values and respiratory symptoms of CRF patients (PFT values and respiratory symptoms before dialysis) were compared with the data of a matched control group of normal subjects (n=18).

Results. Most respiratory symptoms in CRF patients (cough, sputum and breathless) were significantly more prevalent, than control group ($P < .005$ to $P < .001$). The values of forced vital capacity (FVC), forced expiratory volume in one second (FEV1), peak expiratory flow (PEF), maximal mid expiratory flow (MMEF) and maximal expiratory flow at 75%, 50%, and 25% of the FVC (MEF75, MEF50, and MEF25 respectively) in CRF patients were also significantly lower than control group ($P < .001$ for all cases). Most respiratory symptoms of CRF patients at the middle and the end of dialysis were significantly lower than the beginning of dialysis ($P < .05$ to $P < .001$). In addition, some respiratory symptoms were also significantly improved at the end compared to the middle of dialysis ($P < .05$ for all cases). However, the dialysis did not affect PFT values in CRF patients.

Conclusions. The results of this study showed that dialysis in CRF patients can improve the respiratory symptoms but has not effect on PFT values.

O307

Pulmonary Hypertension in Chronic Hemodialysis Patients

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Introduction. End-Stage Renal disease patients receiving chronic haemodialysis via arteriovenous (AV) access often develop various cardiovascular complications, including vascular calcification, cardiac calcification, atherosclerotic coronary disease and high incidence of pulmonary hypertension. In previous studies, by using Doppler echocardiography, 40% prevalence of PHT was reported in patients with ESRD on chronic haemodialysis therapy via AV access. Different Potential mechanisms were explained for the development of pulmonary hypertension. Hormonal and metabolic derangement associated with ESRD might lead to pulmonary arterial vasoconstriction and an increase in pulmonary vascular resistance. Pulmonary arterial pressure may be further increased by high cardiac output resulting from the AV access itself, worsened by commonly occurring anemia and fluid overload.

Methods. In this study, we evaluated pulmonary hypertension in patients with ESRD receiving hemodialysis via AV fistula and in control group of patients who were predialysis. The incidence of pulmonary hypertension was prospectively estimated by Doppler echocardiography

Results. The mean systolic pulmonary artery pressure that measured from hemodialysis patients were 43.03 ± 11.02 and the PAP from the control group was 41.61 ± 12.98 . There is no different between two mean measured PAP ($t = 0.4$, $P = .25$).

Conclusions. This study demonstrates no difference between pulmonary hypertension in patients with ESRD on chronic haemodialysis therapy via AV access and pre ESRD patients.

O308

The Socioeconomic Status of 100 Renal Transplant Recipients in Shiraz

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Introduction. We lack data regarding the socioeconomic status in Iranian renal transplant (RT) recipients. In this cross sectional descriptive study, we assessed whether there is an association between developing renal failure subsequently leading to RT and socioeconomic status.

Methods. We randomly selected and interviewed 100 RT recipients (50 males and 50 females); there was no age limitation; all patients were admitted between 10

to 14 days.

Results. In this study group, the age of 50% of patients was from 16 to 35. The most common cause of chronic renal failure (CRF) was either infection or urinary tract obstruction (30%) followed by hypertension (29%). 55% had family history of CRF. 60% had been on dialysis for more than a year and 49% had received dialysis 3 times per week. 61% had been married, the majority only recently; as a result 47% did not have any children. 41% had more than 3 children. Nearly 65% was unemployed due to physical and emotional impairment as a result of their disease. The majority (73%) did not have a high school diploma and 15% was illiterate. 85% was below the poverty line. 52% was from rural areas. Despite all this, 98% was covered by insurance.

Conclusions. The majority of interviewees were more likely to be below the poverty line, unemployed, without a diploma, and negligent of their disease despite a family history. Most of them were young and married, some with more than 3 children making them more eager to normalize their life with RT.

O309

Recurrent Glomerulonephritis After Kidney Transplantation: A Single Center Experience

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Introduction. Glomerular diseases are among causes of ESRD in about 30-50% of kidney transplant recipients. Following transplantation; recurrence of glomerulonephritis can develop and lead to renal allograft failure. The purpose of this study was to

evaluate recurrent glomerulonephritis and its risk factors in kidney transplant recipients.

Methods. In this study, 110 recipients who underwent first kidney transplantation between May 2000 and 2001 were enrolled. Kidney transplantation was performed from LURD, LRD and Cadaver in 82.7%, 13.6% and 3.6% of patients, respectively. These patients had been followed up for 5 years. Chronic glomerulonephritides were as the underlying causes of ESRD in 28 patients (25%). These include membranous glomerulonephritis (MGN) in 12, focal and segmental glomerulosclerosis (FSGS) in 8, membranoproliferative glomerulonephritis (MPGN) in 2 and SLE in 6. Kidney transplant biopsies were done because of unexplained rise in serum creatinine or new onset proteinuria (≥ 1 g/d) and hematuria. Recurrent Glomerulonephritis (GN) was diagnosed when the result of allograft biopsy was compatible with native kidney biopsy.

Results. Mean age of recipients was 38 ± 12 years and male-female ratio was 2:1. Mean duration of dialysis before transplantation was 15 ± 11 months. Biopsy proven recurrent GN was developed in 8 patients. These consist of FSGS in 4, MGN in 3 and MPGN in 1. The average time to allograft biopsy was 18 ± 2 months. Out of 110 enrolled recipients, 19 patients (17.2%) developed graft loss with average time of 37 ± 18 months after transplantation. In 4 patients (3.6%), recurrent GN (FSGS in 3 and MPGN in 1) was responsible for graft loss. In this study, there was positive significant correlation between male gender, dialysis duration before transplantation, transplantation from LRD and recurrent GN and graft loss.

Conclusions. Recurrent GN can impact allograft function following kidney transplantation. Its incidence is variable according to different series. In our study, 28.5% of patients developed recurrent GN. FSGS was the most frequent recurrent GN and led to graft loss in 75% of cases. Post-transplantation glomerulopathy is an important cause of graft loss and should be taken into consideration and appropriate treatment.