Methods: We determined the levels of serum soluble Klotho in 58 continuous ambulatory peritoneal dialysis (CAPD) patients using ELISA and investigated the relationship between the level of Klotho and markers of CKD-mineral and bone disorder (CKD-MBD) and the abdominal aortic calcification score (AAC), a marker of vascular calcification.

Results: Fifty CAPD patients (86.2%) had abdominal aortic calcification. The serum Klotho level significantly correlated with the 25-hydroxyvitamin D level and inversely correlated with AAC, serum phosphorus and FGF23, not correlated with the parathyroid hormone, bone-specific alkaline phosphatase (BAP), and serum calcium levels. There were significant decreases in serum Klotho in patients with abdominal aortic calcification of ACI > 8. Multivariate Logistic regression analysis showed that lower serum soluble Klotho level and FGF23 were independent risk factors for abdominal aortic calcification. ROC-AUC of serum soluble Klotho for abdominal aortic calcification was 0.81 (cut-off 153.78 pg/mL, accuracy 87.5%, specificity 58.0%).

Conclusion: Decreases in the serum soluble Klotho levels are independently associated with vascular calcification in peritoneal dialysis patients. Further research exploring whether therapeutic approaches to maintain or elevate the Klotho level could improve vascular calcification in peritoneal dialysis patients is warranted.

http://dx.doi.org/10.1016/j.hkjn.2015.09.199

0191
Intradialytic Hypotension as an Independent Risk Factor for 5-year Mortality in Maintaining Hemodialysis Patients

Jinbo Yu1,2, Jianzhou Zou1,2, Zhonghua Liu1,2, Bo Shen1,2, Jie Teng1,2, Xiaoqiang Ding1,2
1Department of Nephrology, Zhongshan Hospital, Shanghai Medical College, Fudan University, Shanghai, China
2Shanghai Institute of Kidney and Dialysis, Shanghai, China

Objective: To assess the risk factors of intradialytic-hypotension (IDH) and the prognosis of IDH among maintenance hemodialysis (MHD) patients for the prevention and treatment of IDH.

Methods: We recruited 293 MHD patients during Jan. 2009 to Dec. 2009. Intradialytic blood pressure was monitored during a 3-month period. IDH was defined as an event characterized by a sudden drop in systolic BP more than 20 mmHg or in mean artery pressure (MAP) more than 10 mmHg associated with clinical events and need for interventions. Dialysis-related information was collected. Kaplan-Meier method, log-rank test, logistic regression and Cox regression analyses were performed to examine the association between IDH and survival, using a follow-up through 31 Dec 2014.

Results: A total of 293 patients were recruited. The incidence rate of IDH was 39.9%. 176 patients with no-IDH (< 1/10 hypotensive events/3 months) served as controls. 117 patients with IDH (≥ 1/10 hypotensive events/3 months) were identified among all 293 patients. Multivariate logistic regression analysis showed that age, ultrafiltration rate, serum NT-proBNP, serum albumin, serum b2MG and AoRD were associated with IDH among MHD patients. During the 5-year follow-up, 84 patients died, with a mortality rate 5.9% per year. Overall mortality rate increased as the incidence of IDH rose. Kaplan-Meier survival curve showed significant difference of overall and CV mortality rates between 2 groups. The multivariate Cox regression model indicated that IDH increased the risk of death (HR = 1.655, 95% CI: 1.061–2.580, P = 0.026). So did the rise of LVMI (HR = 1.008, 95% CI: 1.001–1.016, P = 0.028).

Conclusion: Elderly, high ultrafiltration rate, high level of serum NT-proBNP, high level of serum b2MG, hypoalbuminemia and shorter AoRD are independent risk factors for IDH among MHD patients. LVMI can predict the outcome of MHD patients. Intradialytic hypotension is an independent risk factor for long-term mortality in MHD patients.

http://dx.doi.org/10.1016/j.hkjn.2015.09.200

0193
Impacts of Ultrafiltration Rate and Cardiac Function on Outcomes Among IDH Patients: A 5-year Prospective Cohort Study

Jinbo Yu1,2, Jianzhou Zou1,2, Zhonghua Liu1,2, Bo Shen1,2, Jie Teng1,2, Xiaoqiang Ding1,2
1Department of Nephrology, Zhongshan Hospital, Shanghai Medical College, Fudan University, Shanghai, China
2Shanghai Institute of Kidney and Dialysis, Shanghai, China

Objective: To acknowledge the relationships between intradialytic-hypotension and ultrafiltration rate, as well as cardiac function for the prevention and treatment of IDH.

Methods: 117 IDH-prone patients (IDH ≥ 1/10 hypotensive events/3 months) were recruited during Jan. 2009 to Dec. 2009. Intradialytic blood pressure was monitored during a 3-month period. IDH was defined as an event characterized by a sudden drop in systolic BP more than 20 mmHg or in mean artery pressure (MAP) more than 10 mmHg associated with clinical events and need for interventions. Patients were then divided into 2 groups according to the ultrafiltration volume/ body weight 5%. Dialysis-related information was collected. Kaplan-Meier method, log-rank test and Cox regression analyses were performed to examine the association between ultrafiltration rate, as well as cardiac function and survival in IDH-prone patients, using a follow-up through 31 Dec 2014.

Results: During 5-year follow-up, 30 patients died, with a mortality rate 5.6% per year. There was no difference of overall mortality rate between 2 groups using Kaplan-Meier survival curve (P = 0.878). The multivariate Cox regression model indicated that high ultrafiltration rate increased the risk of death (HR = 1.169, 95% CI: 1.012–1.351, P = 0.034). We compared the cardiac function at baseline and the end of the study by echocardiography. The ejection fraction in high ultrafiltration-rate group decreased significantly. In high ultrafiltration-rate group, multivariate Cox regression model indicated that high ejection fraction reduced 5-year mortality (HR = 0.864, 95% CI: 0.767–0.974, P = 0.016). While high serum NT-proBNP increased 5-year mortality (HR = 8.568, 95% CI: 2.079–35.319, P = 0.003). In low ultrafiltration-rate group, multivariate Cox regression model indicated high ultrafiltration rate increased the risk of death (HR = 1.273, 95% CI: 1.002–1.617, P = 0.048).

Conclusion: High ultrafiltration rate is the leading risk factor for poor outcome in IDH-prone patients. Some IDH-prone patients have pretty good cardiac function, but might develop cardiac insufficiency due to long-term over-ultrafiltration.

http://dx.doi.org/10.1016/j.hkjn.2015.09.201

0198
Association Between Low T3 Syndrome and Arterial Stiffness in Continuous Ambulatory Peritoneal Dialysis Patients

Suren Liang, Zhiling Gue
Department of Nephrology, First Affiliated Hospital, Henan University of Science and Technology, Luoyang, China

Objective: To investigate association between low T3 syndrome and arterial stiffness in continuous ambulatory peritoneal dialysis patients.

Methods: 129 continuous ambulatory peritoneal dialysis (CAPD) patients were divided into the low T3 syndrome group and euthyroid function group. All patients received a series of examinations every 3 months, including blood biochemical indices and pulse wave velocity (PWV) for arterial stiffness. The data were analyzed using an independent t-test to compare PWV, blood biochemical indices and metabolic status between low T3 syndrome and euthyroid patients. Multiple regression analysis was performed to identify risk factors for PWV.

Results: Both age and proportion of female patients were significantly higher in low T3 syndrome group compared with the euthyroid function group (P < 0.001; P = 0.044), although no significant differences in hemoglobin, albumin, metabolic status or other values were found. However, PWV was much higher in low T3 syndrome group than that in euthyroid function group (P < 0.001). PWV was significantly correlated with the diabetes (P < 0.001), age (P = 0.001), systolic pressure (P = 0.038), diastolic pressure (P = 0.045), euthyroid function (P < 0.001), plasma albumin (P = 0.007) and KTV/R (remnant kidney; P = 0.018). Multiple regression analysis revealed that the level of free triiodothyronine (T3), diabetec status and age were the independent risk factors of PWV. They accounted for 57.0% of the total variance.
Conclusion: The CAPD with low T3 syndrome is correlated PWV, and the CAPD patients with low T3 syndrome show increased arterial stiffness.

http://dx.doi.org/10.1016/j.hkjn.2015.09.202

0213
Influence of Peritonitis on Gastrointestinal Function of Patients with Continuous Ambulatory Peritoneal Dialysis
Dewei Zhang, Hongguang Zheng, Ping Xu
The General Hospital of Shenyang Military Area Command, Shenyang, China

Objective: To explore the influence of peritonitis on CAPD patients of gastrointestinal symptoms and gastric myoelectric activity, and to explore the correlation between gastrointestinal symptoms and gastric myoelectric activity.

Methods: 72 patients were selected, including 24 patients with suffering peritonitis (group A), 24 patients with having suffered and cured peritonitis 3 months ago (group B), and 24 normal CAPD patients (group C) as the control group. All cases were evaluated subjectively with Gastrointestinal Symptom Rating Scale (GSRS). The gastric myoelectric activity was assessed by cutaneously recorded electrogastrographs (EGGs) in the resting state.

Results: (1) The incidence of gastrointestinal symptoms in group A, group B and group C was respectively 91.67%, 70.83% and 54.17%. (2) GSRS scale scores of patients in group A in abdominal pain, dyspepsia and gastroesophageal reflux were significantly higher than that of group B and C (P < 0.01). (3) GSRS scale scores of group B in dyspepsia, constipation, abdominal pain and eating dysfunction were higher than group C, although there were no significant differences (P > 0.05). (4) The gastric electrical frequency (2.5–3.75 cpm) percentage before a meal and after standard meal in group A was significantly lower than that of group B and group C (P < 0.05), and in group C was higher than that in group B (P < 0.05). (4) The variance of EGG dominant frequency and power after a standard meal in group A and group B were less decreased, compared with the changes of group C (P < 0.05).

Conclusion: The peritonitis can significantly increase the incidence of gastrointestinal symptoms in CAPD patients, and the effects can exist for a long time. The abnormal gastric myoelectric activity in patients with PDAP and the disorders of gastrointestinal function can be correlated between, and the electrogastrogram can be an important means of gastrointestinal function evaluation in CAPD patients.

http://dx.doi.org/10.1016/j.hkjn.2015.09.203

0214
1,25(OH)2D3 Inhibits High Glucose-induced Apoptosis and ROS Production in Human Peritoneal Mesothelial Cells Through MAPK/P38 Pathway
Lina Yang, Jianfei Ma
Department of Nephrology, The First Affiliated Hospital of China Medical University, Henyang, Liaoning, China

Objective: 1,25(OH)2D3 plays an important role in the regulation of cell proliferation, cell differentiation and immunomodulation. However, its function on apoptosis and oxidative stress in human peritoneal mesothelial cells (HPMCs) remain unknown. This study investigated whether 1,25(OH)2D3 protects high glucose (HG)-induced apoptosis and ROS production in HPMCs and examined the underlying molecular mechanisms.

Methods: We used HG stimuli to reproduce the damage of peritoneal injury in vitro, and examined the effect of 1,25(OH)2D3 on apoptosis and ROS production in HPMCs. The expressions of Bax, Bcl-2, phospho-P38 and P38 in HPMCs were evaluated by western blot analysis, and apoptosis was determined by analysis of FITC-Annexin V/PI staining. Intracellular accumulation of ROS was measured using 2, 7-dichlorofluorescin diacetate (DCF-DA).

Results: We found that HG increased apoptosis and ROS production, pre-treatment with 1,25(OH)2D3 significantly inhibited HG-induced HPMCs apoptosis and ROS production in HPMCs. Further analysis revealed that 1,25(OH)2D3 facilitated cell survival through MAPK/P38 pathway.

Conclusion: These results indicate that 1,25(OH)2D3 can inhibit apoptosis and ROS production in HG-treated HPMCs through MAPK/P38 pathway.

http://dx.doi.org/10.1016/j.hkjn.2015.09.204

0217
Association of Individual and Regional Socioeconomic Status on Initial Peritonitis and Outcomes in Peritoneal Dialysis Patients: A Propensity Score Matched Cohort Study
Qin Wang1, Ke-Jie Hu1, Ye-Ping Ren1, Jie Dong1, Qing-Feng Han1, Tong-Ying Zhu1, Jiang-Hua Chen1, Hui-Ping Zhao1, Meng-Hua Chen2, Rong Xu3, Yue Wang3, Chuan-Ming Hao4, Xiao-Hui Zhang3, Mei Wang5, Na Tian1, Hai-Yan Wang2
1The Second Affiliated Hospital of Harbin Medical University, Harbin, China
2Peking University First Hospital, Beijing, China
3Peking University Third Hospital, Beijing, China
4Huashan Hospital of Fudan University, Shanghai, China
5The First Affiliated Hospital, College of Medicine, Zhejiang University, Hangzhou, China
6Peking University People’s Hospital, Beijing, China
7General Hospital of Ningxia Medical University, Ningxia, China

Background: Research indicates that the socioeconomic status (SES) of individuals and the area where they live are related to initial peritonitis and outcomes in peritoneal dialysis (PD). Therefore, a retrospective, multi-center cohort study was conducted in China to examine these associations.

Methods: Data on 2,171 PD patients were collected from seven centers, including baseline demographic, socioeconomic, and laboratory data. We explored the potential risk factors for initial peritonitis and outcomes using univariate Cox regression and unadjusted binary logistic regression. Then, we used propensity score matching to balance statistically significant risk factors for initial peritonitis and outcomes, and Kaplan-Meier survival analysis to compare differences in peritonitis-free rates between different groups of participants after matching.

Results: A total of 563 (25.9%) initial episodes of peritonitis occurred during the study period. The Kaplan-Meier peritonitis-free rate curve showed high-income patients had a significantly lower risk than low-income patients (p = 0.007) after matching for age, hemoglobin, albumin, and regional SES and PD center. The risk of treatment failure was significantly lower in the high-income group after matching for the organism causing peritonitis and PD center: OR = 0.27 (0.09–0.80, p = 0.018). Regional SES and education were not associated with initial peritonitis and outcomes.

Conclusion: Our study demonstrates low individual income is a risk factor for the initial onset of peritonitis and treatment failure after initial peritonitis.

http://dx.doi.org/10.1016/j.hkjn.2015.09.205

0218
Arcanobacterium pyogenes bacteremia in a Man on Hemodialysis with Central Venous Catheter
X. H. Chen1, Z. H. Liu1, B. Shen1, J. Z. Zou1
1Blood Purification Center, Zhongshan Hospital, Shanghai, China
2Department of Nephrology, Zhongshan Hospital, Shanghai, China

Objective: Arcanobacterium pyogenes itself is a well-known zoonotic pathogen. Reports of human infections are rare. Here we describe a case of A. pyogenes infection by blood culture, in a hemodialysis (HD) patient with central venous catheter (CVC) without typical epidemiological exposure. Characteristics of human infection with A. pyogenes also are presented.

Methods: We describe a case in a 54-year-old man, who depending on HD by a permanent CVC and with no identified animal contact, presented with catheter-related infection caused by Arcanobacterium pyogenes.

Results: Blood cultures from both the CVC and peripheral site were obtained. Standard biochemical bacteriological testing confirmed A. pyogenes. The patient was treated with vancomycin 0.5 g every 8 hours plus cefazolin 3.0 g once daily...