The COX regression analysis shows that the factors significantly predicting event-free survival time are the number of territories with plaque, being on dialysis, smoking, diabetes, high levels of phosphorus, low albumin and 25OH vitamin D as well as having 1,25(OH)1 vitamin D below 14 pg/ml.

Conclusions: The severity of arterial atherosclerosis estimated by ultrasound predicts the time from CVE to CKD. Arterial ultrasound is a useful tool to predict cardiovascular risk in CKD patients.

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TH-PO624

The Effects of Diuretics on the Progression of CKD and Incidence of Cardiovascular Events: Results from the CKD-ROUTE Study – A Prospective Cohort Study of Newly Visiting CKD Patients in Japan

Shotaro Naito, Soichiro Iimori, Eisei Sohara, Tomokazu Okado, Sei Sasaki, Zhonglin Feng, Wei Dong, Sijia Li, Wei Patel, 1

Background: Non-dialysis-dependent CKD (ND), HD, and PD patients, respectively; p <0.001). Meanwhile, there was no difference in the change of MDI between those on HD and PD.

Methods: We recruited 937 newly visiting CKD patients followed for the next 3 years. At 6 months visit, use of RAAS inhibitors (RAAS), calcium channel blockers (CCB), and diuretics was assessed, and the association between these medications and outcomes was evaluated. The outcomes were composite kidney endpoint of ESKD or 50% decline of eGFR and death, and the primary endpoint of death during each of the study years after first visit to nephrologists. We used multivariate Cox proportional hazards regression adjusted by age, sex, albumin, hemoglobin, eGFR, systolic blood pressure, presence of proteinuria and diabetes, and past history of CV events.

Results: The first visit to nephrologists was at 67 years old (SD: 7.02%) was male, mean eGFR was 33.7 ml/min/1.73m2, and mean systolic blood pressure was 139 mmHg. During the follow-up period of 3 years, 114 CV events occurred, 24 patients died of CV events, and 220 patients reached the composite kidney endpoint. In multivariable analysis, risk of CV events and CV related death during the 3-year period was higher in the patients using diuretics at six months visit (adjusted hazard ratio 1.55 [95%CI 1.23-2.33] for CV events, 3.09 [95%CI 1.19-8.02] for CV related death.) The patients taking both diuretics and RAASI had comparable risk of CV events with those taking diuretics only (adjusted HR 1.09 [95%CI 0.54-2.2]) However, none of the three kinds of anti-hypertensive agents had associations with CKD progression.

Conclusions: CKD patients using diuretics were more likely to have CV events and CV related death. RAASI might contribute to reduce the risk of CV events by diuretics.

TH-PO625

Rapid Increase in Aortic Stiffness in Patients on Hemodialysis and Peritoneal Dialysis Compared with Non-Dialysis-Dependent Chronic Kidney Disease Patients: A Longitudinal Study Using MRI-Based Pulse Wave Velocity: Kazuhiko Tsunoya, Hişako Yoshida, Takanari Kitaizono.

Background: Pulse wave velocity (PWV) is a well-established technique for obtaining a measure of arterial stiffness that has the potential to provide information on early atherosclerotic disease. MRI-based PWV measurements have been well validated in comparison with invasive pressure recordings (Grotenhuis et al. J Magn Reson Imaging, 2009). To date, very few studies have reported on MRI-based PWV in patients with chronic kidney disease (CKD), especially in patients with end-stage kidney disease on hemodialysis (HD) and peritoneal dialysis (PD). In the present study, we examined the annual changes in MRI-based PWV from baseline to 2 years and compared them among non-dialysis-dependent-CKD (ND), HD, and PD patients.

Methods: A total of 172 CKD patients (ND, n=89; HD, n=47; PD, n=36) were recruited and underwent cardiovascular MRI at baseline and 2 years later. Using cine and phase contrast sequences, the cross-sectional area for distensibility and average blood flow were measured between the ascending and the proximal descending aorta. Annual change in PWV was calculated as MRI-based PWV after 2 years—baseline MRI-based PWV) × 365/interval days between the first and second MRI. Multivariable linear regression analysis was used to evaluate the differences in changes among the 3 patient groups.

Results: The annual changes in PWV were significantly increased in patients on HD and PD compared with ND patients, even after adjusting various confounding factors including age, sex, and blood pressure (least square means were 0.18, 0.35, and 0.49 in ND, HD, and PD patients, respectively; p <0.001). Meanwhile, there was no difference in the changes between HD and PD patients (p < 0.736). Conclusion: Progression of aortic stiffness is more rapid in patients on HD and PD compared with ND patients independent of age and blood pressure, while comparable between those on HD and PD.

TH-PO626

The Recent ADQI Proposal for a Functional Classification System of Heart Failure in Patients with End-Stage Renal Disease Will Substantially Overdiagnose Cardiac Disease Among Chronic Kidney Disease Patients

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Background: The Acute Dialysis Quality Initiative (ADQI) XI Workgroup has recently proposed a novel classification for HD stages in advanced CKD, which is based on a broad spectrum of echocardiographic criteria. We hypothesize that these criteria will substantially overdiagnose HD across the whole spectrum of CKD, as echocardiographic changes are a very frequent finding even among patients with mild to moderate CKD.

Methods: Within the ongoing CARE FOR HOME study we echocardiographically examined 317 patients in GFR categories G2 – G4, following American Society of Echocardiography guidelines. According to ADQI criteria, HD is defined by moderate to severe changes in any of the following categories: valve function, left atrial volume index (LAVI), left ventricular (LV) or right ventricular systolic function, LV mass index, LV diastolic function, LV diameter, or regional LV wall contractility. Patients were followed for a mean of 3.6 ± 1.5 years until the first admission for decompenated HF.

Results: Among the 317 CKD patients, 209 (66%) fulfilled ADQI criteria. HD was detected more often in advanced CKD (G3b/G4: 114/146, 78%) than in milder CKD (G2/G3a: 95/171, 56%). An increased LAVI (158/317; 50%) and diastolic dysfunction (101/317; 32%) were the most frequent findings within the subcategories of echocardiographic changes. Among all 209 patients with ADQI HD, only 24 patients (11%) suffered decompenated HF during follow-up. A CV event-free four-year survival was 89%.

Conclusions: The proposed ADQI criteria will substantially overdiagnose HF among patients with mild to moderate CKD. We suggest defining more conservative echocardiographic criteria for HF prior to introduction of this new classification in daily clinical practice. The validity and reliability of such revised criteria should subsequently be analyzed across the whole spectrum of CKD.

TH-PO627

Prognostic Value of Pulmonary Hypertension in Combination with Heart Valvular Calcification on Cardiovascular Outcome in Maintenance Hemodialysis Patients

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Background: Our previous study had revealed pulmonary hypertension (PH) as a predictor of all-cause mortality, cardiovascular mortality and new-onset cardiovascular events in maintenance hemodialysis (MHD) patients. We hypothesize that patients complicated with both PH and heart valvular calcification (HVC) may take higher cardiovascular risk than those suffer from PH or HVC only.

Methods: 304 Chinese MHD patients were enrolled and followed up for 24 months. Each patient underwent Doppler echocardiographic evaluation before entry. A value of Systolic PAP (SPAP) ≥35 mmHg was defined as PH. HVC was defined as the presence of bright echoes of >1mm on one or more cusps of the aortic valve, mitral valve or mitral annulus. Patients were divided into 3 groups: No risk group (with neither PH nor HVC, n=140), One Risk Factor Group (with PH or HVC, n=121) and Two Risk Factors Group (with PH and HVC, n=43). The endpoints were all-cause mortality, CV mortality and CV events.

Results: A total of 63 (20.7%) patients died during follow-up from all causes; 18 (12.9%) in Group 1, 29 (24.0%) in Group 2, and 16(37.2%) in Group 3. 36 died of CV events (57.1% of the causes of death); 76(5%) in Group 1, 16(31.3%) in Group 2, and 13 (30.2%) in Group 3. All-cause and CV mortality increased significantly in both Group 2 and 3. 103(33.2%) had new-onset CV during the follow-up period; 29(20.7%) in Group 1, 43(35.5%) in Group 2, and 29 (67.4%) in the non-PH group, which was a significant difference (p<0.05). PH in combination with HVC increased risk for all-cause, CV mortality and new-onset CV event [HR:4.32(2.01-8.90) versus 1.93(1.03-3.63) for all-mortality, 6.49(2.57-16.39) versus 2.60(1.05-6.44) for CV mortality and 3.51(2.03-6.07) versus 1.40(0.86-2.30) for new onset CV event].

Conclusions: PH in combination with HVC predicts worse outcome than those with either PH or HVC in MHD patients. Echocardiography can easily identify both PH and HVC, and is helpful to stratify risk in this population.

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TH-PO628

Survival of ESRD Patients Diagnosed with Idiopathic Heart Failure prior to Dialysis

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Background: Cardiac-renal syndrome type 2 (CRS-2) is defined as chronic abnormalities in heart function leading to kidney injury or dysfunction, and may occur in end-stage renal disease patients admitted for heart failure (HF) (Ronco, Eur Hr J 31:703, 2010). Idiopathic HF (HF) may clinically manifest as CRS-2 and progress to ESRD. The prognostic

Key: TH - Thursday; FR - Friday; SA - Saturday; OR- Oral; PO - Poster; PUB - Publication Only Underline represents presenting author. 231A