CORONARY ARTERY CALCIFICATION PREDICTS MICROCALCIFICAION OF VASCULAR ACCESS IN HEMODIALYSIS PATIENTS

THE CATHOLIC UNIVERSITY OF KOREA UIJEONGBU ST. MARY'S HOSPITAL DEPARTMENT OF NEPHROLOGY

*Kyeong Pyo Lee, Bomi Choi, Young Soo Kim, Sun Ae Yoon, Young Ok Kim

Background: We have reported that arterial micro-calcification (AMC) of vascular access has a negative impact on access patency and cardiovascular mortality in hemodialysis (HD) patients. Because AMC is diagnosed by histologic examination, it cannot be commonly performed. Coronary artery calcification (CAC) is quite common and known risk factors of cardiovascular mortality in HD patients. It can be easily detected by noninvasive computed tomography. Therefore we evaluated which CAC may predict AMC in nondiabetic HD patients, because we excluded impact of diabetes mellitus on CAC and AMC. **Methods:** Forty non diabetic incident HD patients who received vascular access operation were included in this study. The AMC was diagnosed by pathologic examination of arterial specimen by von Kossa stain, which was acquired during the operation. All patients underwent a multi-detector computed tomography (MDCT) imaging procedure and coronary artery calcium score (CACS) was calculated. Patients were classified into two groups, according to the CACS, as low (<100), in 23 patients, and high (≥100), in 17 patients. We compared CACS between the patients with and without AMC. **Results:** Mean age was 63.4±16.5 years and the male gender was 24 (60.0%). The incidence of AMC was 35.0% (n=14). The mean CACS was 185.9±299.4 (0-1421.7), and the median value was 54.1. Patients with high CACS group were older than low CACS group(74.1±9.7 211vs 55.5±16.1, $p<0.05$). High CACS showed higher incidence of AMC compared to low CACS group (58.8% vs 17.4%, $p<0.05$). By binary logistic regression, high CACS was independently associated with positive AMC (OR 8.381, 95% CI 1.725-40.732, $p<0.05$). **Conclusions:** The present study suggests that CAC predicts AMC of vascular access in nondiabetic HD patients.

Phosphate-Dense Diet Correlates with Decline Renal Function in Diabetic Individuals

Department of Internal Medicine, Yonsei University College of Medicine, Seoul, Korea

*Misol Lee, MD, Chang-Yun Yoon, MD, Youn Kyung Kee, MD, Changhwan Seo, MD, Min-Uk Cha, MD, Hyoungnae Kim, MD, Seohyun Park, MD, Hae-Ryong Yun, MD, Su-Young Jung, MD, Jong Hyun Jhee, MD, Hyung Jung Oh, MD, Seung Hyeok Han, MD, PhD, Tae-Hyun Yoo, MD, PhD, Shin-Wook Kang, MD, PhD, and Jung Tak Park, MD, PhD

Background: We investigated that whether high Pi diet would affects the incidence of renal dysfunction in subjects with diabetes whose are most concerned about declining kidney function. **Methods:** The Korean Genome and Epidemiology Study (KoGES), a prospective community-based cohort study was used to conduct the present work. The study cohort consisted of 40- to 69-year-old residents, and the followed-up biennially from 2001 to 2014. Total of 873 diabetic and 5,846 non-diabetic subjects were included. The primary end point was a composite of eGFR <60 ml/min/1.73 m^2 or the development of proteinuria. **Results:** The mean age was 55.6±8.7 and 51.4±8.6 years in diabetic and non-diabetic groups, and 454 (52.0%) in diabetic and 2,784 (47.6%) in non-diabetic individuals were men. The mean eGFR and Pi-dense diet (Pi/total intake) were 91.6±14.0 ml/min/1.73 m^2 and 0.51±0.08 mg/kcal in diabetic group, 94.5±14.0 ml/min/1.73 m^2 and 0.51±0.07 mg/kcal in non-diabetic group, respectively. Each of diabetic and non-diabetic subjects were divided into four groups according to the degree of Pi-dense diet. During a mean follow-up duration of 100.0±41.4 months in diabetic subjects and 115.4±33.8 months in non-diabetic subjects, incidence of decline renal function was observed in 283 (32.4%) and 792 (13.5%) subjects in the diabetes and non-diabetes groups. Multiple Cox proportional hazard analysis adjusted for multiple confounding factors revealed that the most Pi-dense diet group had a significantly more declining renal function events than the lesser Pi-dense diet groups in diabetic subjects ($p=0.022$). In contrast, there was no significant difference in the rate of declining renal function events among the groups in non-diabetic individuals ($p=0.719$). **Conclusions:** These results assuming that Pi-dense diet would affect decline renal function even in individuals with preserved renal function.