KSN 2020
FULLY VIRTUAL MEETING

Abstract Type : Poster
Abstract Submission No. : PO-1331

Body surface area is association with increased femur neck bone density compared to body mass index in CKD patients: a cross-sectional analysis from the KNOW-CKD cohort

Yongjin Yi, Jong Cheol Jeong, Sejoong Kim, Ho Jun Chin, Ki Young Na, Dong-Wan Chae
Department of Internal Medicine-Nephrology, Seoul National University Bundang Hospital, Korea, Republic of

Objectives: Osteoporosis and osteoporosis assessed by the BMD are well-known risk factor of fracture in general population. Not only general population, BMD has been recently revealed as a predictive marker of fracture in CKD stages 3 to 5ND and dialysis patients. In CKD patients, there were lack of evidence of association between BMD and clinical measurements. The purpose of this study is to investigate relationship between bone density and risk factors as anthropometric, biochemical and clinical measurements in CKD patients from the KNOW-CKD cohort.

Methods: From April 2011 to February 2016, a total of 1,977 subjects who performed DEXA BMD and anthropometric measurement as body surface area (BSA), BMD and waist circumference (WC) were selected from the KNOW-CKD cohort. Study participants had followed up until March 2018. The subjects were grouped according to quartile value of baseline femur neck BMD (fnBMD). Association with fnBMD and risk factors for osteoporosis or osteopenia are analyzed. We performed multivariate linear regression for fnBMD and logistic regression for osteoporosis or osteopenia analysis adjusted by sex, age, BSA, BMI, serum sodium, 1,25(OH)2 vitamin D, 25(OH) vitamin D, PTH, adiponectin, osteoprotegerin and smoking.

Results: Higher fnBMD quartile group associated with higher BSA, BMI and waist circumference. In multivariate linear regression analysis, BSA was positively associated with fnBMD (Coefficient 0.278, *p*-value <0.001), whereas significant correlation between BMI and fnBMD was disappeared fnBMD (Coefficient -0.002, *p*-value 0.376). In total cohort lower BSA was associated with increased risk for osteoporosis or osteopenia with OR of 0.012 (95% confidence interval [CI] 0.003–0.049). Serum vitamin D, PTH and adiponectin levels are associated with fnBMD and presence of osteopenia or osteoporosis.

Conclusions: In our study, BSA is associated with fnBMD more than BMI in the CKD patients. Obesity represented by BMI supposedly has negative effects on bone-mineral metabolism in CKD patients.