

Current Status of CKD-MBD in Korea

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Chronic kidney disease-mineral bone disorder (CKD-MBD) is a common complication occurring in CKD patients. In addition to biochemical abnormalities in serum Ca and P, CKD-MBD can cause vascular calcification and cardiovascular diseases (CVD), and these conditions are closely associated with an increased mortality rate. Recently, these associations have been demonstrated, even in early-stage CKD patients. According to the end-stage renal disease registry of the Korean Society of Nephrology, there were 52,378 hemodialysis (HD) and 7,540 peritoneal dialysis (PD) patients in Korea in 2013, and CVD was the most common cause of death in dialysis patients. In a multicenter observational study of 1,018 patients undergoing chronic HD in 17 tertiary care centers throughout Korea, the mean serum levels of Ca, P, and the Ca-P product were 9.1 mg/dL, 5.3 mg/dL and 48.0 mg²/dL², respectively. When classified by the Kidney Disease Outcome Quality Initiative (KDOQI) guidelines, about one half of the patients had uncontrolled hyperphosphatemia >5.5 mg/dL. In addition, 270 patients (26.5%) had iPTH >300 pg/mL whereas 435 patients (42.7%) showed iPTH <150 pg/mL. Those patients who were out of the target range might be associated with poor prognosis, including mortality secondary to CVD.

The KNOW-CKD (KoreaN Cohort Study for Outcome in Patients With Chronic Kidney Disease, NCT01630486 at <http://www.clinicaltrials.gov>) is a prospective cohort study that enrolls subjects with chronic kidney disease stages 1 to 5 (predialysis). Interim analysis of 1,528 adult CKD patients enrolled as of December 2013 showed that secondary hyperparathyroidism (defined by iPTH > 65pg/ml) and elevation of FGF23 level were common among advanced CKD patients, while vitamin D deficiency was common across the entire CKD stages. Association between mineral metabolic parameters and cardiovascular surrogate markers was also shown in this study.

Therefore, establishment of Korean practice guideline is warranted with respect to CKD-MBD.