Update in CKD-MBD Guideline

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Chronic Kidney Disease–Mineral and Bone Disorder (CKD-MBD) is a major complication of CKD, including biochemical abnormalities, vascular calcification, and bone fragility. The Kidney Disease Improving Global Outcomes (KDIGO) group has updated the KDIGO Chronic Kidney Disease–Mineral and Bone Disorder (CKD-MBD) guideline since 2017. This guideline has been changed in several issues from the previous version announced in 2009. Regarding of bone abnormality seen in CKD stage G3a-G5D, testing of bone densitometry (BMD) to evaluate fracture risk and bone biopsy to demonstrate types of renal osteodystrophy is suggested if the findings add valuable information for treatment.

Serially serum measurements of calcium, phosphate and PTH levels should be also considered for CKD-MBD treatments. In CKD G3a-G5D patients, targeting to lower the phosphate levels towards normal range if hyperphosphatemia develops persistently or progressively, and avoidance of hypercalcemia are suggested. The guideline states the importance of high phosphate diet control and restriction of calcium-based phosphate binder dose. In CKD G3a–G5 non dialysis patients, if intact PTH levels progressively or persistently are elevated above the upper normal limit for the assay, it needs to correct hyperphosphatemia, hypocalcemia, high phosphate intake, and vitamin D deficiency. Usage of calcitriol and vitamin D analogs should be preserved for severe and progressive hyperparathyroidism.

In CKD G5D requiring the PTH-lowering treatment, calcimimetics, calcitriol, or vitamin D analogs, or a combination of calcimimetics with calcitriol or vitamin D analogs are considered as acceptable first line options. Additionally, in patients within the first 12 months post kidney transplant with estimated glomerular filtration rate more than 30 ml/min/1.73 m² and low BMD, the guideline suggests treatment with vitamin D, calcitriol/alfacalcidol, and/or antiresorptive agents. The appropriate choice depends on the levels of calcium, phosphate, PTH, alkaline phosphatases, and 25(OH)D including bone biopsy, which may be considered in some cases.

References:

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