9991

Prevention and management of Fracture in CKD

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Abstract

Chronic kidney disease (CKD) is associated with the development of mineral abnormalities, osteoporosis, and fragility fractures. Osteoporosis is a progressive systemic skeletal disorder characterized by compromised bone strength predisposing a person to an increased risk of fracture. Because CKD is an independent risk factor for osteoporosis, both osteoporosis and CKD often coexist and are common conditions with increasing prevalence worldwide.

Bone fragility related to CKD includes the risk factors observed in osteoporosis in addition to those related to CKD, resulting in a higher risk fracture. The prevalence of skeletal fractures in the subjects with CKD has significantly increased in the recent years along with aging. There is a need for routine evaluation of fracture risk and fracture prevention in CKD patients. Despite several controversies and limitations on bone mineral density (BMD), the 2017 KDIGO guidelines recommended measurement of BMD to evaluate the fracture risk of CKD patients. As with the general population, lifestyle measures to improve bone health also applies to CKD patients. Before considering specific treatment options for osteoporosis and fractures, the treatment of patients with CKD should focus on reversing or reducing the degree of biochemical abnormalities associated with CKD-MBD. Treatment of osteoporosis in patients with CKD stages 1–3 is the same as that in general population. The use of specific medications for osteoporosis in the context of advanced CKD stages 4–5D is complex and challenging, requiring the treating physician to be familiar both with the principles of managing osteoporosis and CKD-MBD. Therefore, management strategies for fracture prevention in patients with CKD-MBD will continue to require a multidisciplinary patient-centered approach.