Management of secondary hyperparathyroidism in dialysis patients

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Secondary hyperparathyroidism (SHPT), which is characterized by excessive synthesis of parathyroid hormone (PTH) with parathyroid hyperplasia, is one of serious complications in chronic kidney disease (CKD) leading the increase of cardiovascular events and deterioration of bone integrity. Complicated pathogenesis accompanied with slight decrease in serum calcium, hyperphosphatemia, and decreased 1,25-dihydroxyvitamin D warrants multidirectional managements. The goal of treatment of secondary hyperparathyroidism is the balance of mineral metabolism maintaining the optimal range of PTH, which could be helpful to reduce the risk of adverse outcome such as cardiovascular disease or fracture.

Vitamin D analog and calcimimetics have been adopted for maintaining optimal PTH level and avoiding parathyroid hyperplasia. Choice of medication should be individualized considering serum calcium, phosphate and ALP level and the degree of vascular calcification. Adynamic bone disease due to the over-suppression PTH should be avoided.

Dietary intervention and utilizing proper phosphate binder are the key elements of management of hyperphosphatemia. Consumption of high quality of protein with relatively low phosphate content should be emphasized from stage 3 CKD patients for hyperphosphatemia avoiding protein energy wasting at the same time. Recently, non-calcium based phosphate binder is suggested for reducing vascular calcification and better survival. Further development in non-calcium based phosphate binder for better compliance with fewer side effects should be needed.