

The Use of 1,25-Dihydroxyvitamin D₃ in Early Renal Failure.

Goodman WG, Coburn JW. *Annu Rev Med* 1992; 43:227-237.

Abstract.

Alterations in renal calcitriol synthesis are important in the pathogenesis of secondary hyperparathyroidism in patients with progressive renal failure. Many of the manifestations of secondary hyperparathyroidism can be reversed by treatment with 1alpha-hydroxyvitamin D₃, but some studies suggest that such treatment accelerates the rate of progression of renal disease in patients with mild to moderate renal failure. Thus, calcitriol and 1alpha-hydroxyvitamin D₃ have been used infrequently in this group of patients. A review of more than 20 clinical reports indicates that the use of calcitriol or 1alpha-hydroxyvitamin D₃, in daily doses of 0.25 – 0.5 µg, is rarely associated with hypercalcemia, hyperphosphatemia, or impairment in renal function. If such complications arise, they are usually reversible when treatment with vitamin D sterols is withdrawn and serum calcium levels return to pretreatment values. There is evidence that calcitriol impairs creatinine secretion by the renal tubule; thus, serum creatinine levels may increase and measurements of creatinine clearance may fall during calcitriol therapy in patients with mild to moderate renal failure without any change in true glomerular filtration rate. Daily oral doses of 0.25-0.50 µg of calcitriol or 1alpha-hydroxyvitamin D₃ are well tolerated, and they can reverse the biochemical and histologic features of secondary hyperparathyroidism. Calcitriol therapy may be particularly valuable in patients recognized to be at higher risk of developing progressive secondary hyperparathyroidism as their renal failure slowly advances.