

ABSTRACT**EFFECTS OF PARICALCITOL ON SERUM CALCIUM, PHOSPHATE, INTACT PARATHYROID HORMONE AND BONE-SPECIFIC ALKALINE PHOSPHATASE LEVELS IN PATIENTS WITH STAGE 5 CHRONIC KIDNEY DISEASE ON HEMODIALYSIS**

Background : Chronic kidney disease-mineral bone disorder (CKD-MBD) is characterized by abnormalities in calcium, phosphate, calcitriol, and parathyroid hormone (PTH) levels. Paricalcitol is a synthetically analog of calcitriol that has been shown to reduce PTH levels by inhibiting the process of synthesis and secretion with minimal calcemic and phosphatemic activity. Bone-specific alkaline phosphatase (b-ALP) is an osteoblastic enzyme that express during bone formation that is unaffected by renal dysfunction and hemodialysis. This study was designed to determine effects of paricalcitol on serum calcium, phosphate, iPTH and b-ALP levels in patients with stage 5 CKD on hemodialysis.

Methods : Nine patients with stage 5 CKD on maintenance hemodialysis that iPTH levels ≥ 150 pg/mL were included into the study. All patients underwent hemodialysis twice a week and divided into two groups. Four patients received paricalcitol 5 μ g intravenously at the end of hemodialysis session for 3 months (paricalcitol group) and five patients not received paricalcitol (without paricalcitol group). Nutritional counseling, phosphate binder (calcium acetate or lanthanum), and biphosphonate (risedronate) were allowed during the study. Levels of calcium, phosphate, iPTH, and b-ALP were measured twice, before starting paricalcitol and after 3 months of starting paricalcitol.

Results : Baseline characteristics, initial serum levels of calcium, phosphate, iPTH, and b-ALP were similar between groups. No significant changes over the parameters in the paricalcitol group after treatment. While only serum levels of iPTH increased significantly in the without paricalcitol group ($p=0.005$). Significant differences between groups only observed in serum levels of delta b-ALP ($p = 0.040$). Correlation between serum levels of iPTH and bALP showed on overall patients ($r=0.651$; $p=0.003$).

Conclusion : Paricalcitol was able to maintain serum levels of iPTH, lower serum levels of b-ALP but had no effect on serum levels of calcium and phosphate. Increased serum levels of iPTH correlated to increased serum levels of b-ALP.

Keyword : Paricalcitol, stage 5 chronic kidney disease, maintenance hemodialysis, b-ALP, iPTH.