

혈액투석 환자에서의 부갑상선 호르몬과 생화학적 지표

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Parathyroid Hormone and Biochemical Profile in Hemodialysis Patients

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Introduction : Renal osteodystrophy (ROD) is a major complication in hemodialysis patients. Measurement of serum peptide derived from the degradation of bone collagen could potentially provide an indirect estimate of bone resorption. The aim of the present study was to evaluate hormonal and biochemical abnormalities of bone disease in end-stage renal disease patients.

Methods : 137 hemodialysis patients were studied. Serum bone markers determined were bone-specific alkaline phosphatase (BAP) and osteocalcin (OC) as bone formation markers and the C-terminal telopeptide of type I collagen (beta-CTx) as bone resorption markers. In addition, intact PTH (iPTH), calcium, phosphate, alkaline phosphatase, acid phosphatase, and creatinine in serum were determined.

Results : iPTH level was 124.6 ± 174.9 pg/mL and less than twice normal in 69.5% of patients. Hypocalcemia was present in 16.5% and hyperphosphatemia in 35.7% of patients. Empirical vitamin D was prescribed in 40% of patients. Age, sex, diabetic status, and vitamin D use were similar in patients with high PTH (>130 pg/mL) and low PTH levels (<130 pg/mL). Serum beta-CTx correlated significantly in a positive manner with serum BAP and OC. Serum beta-CTx, as well as BAP, and OC, correlated significantly with BMD.

Conclusion : These results suggest that even when there is no increase in iPTH, bone remodeling increases (possibly due to other factors) exhibiting higher bone resorption, and beta-CTx would seem to be an adequate non-invasive tool to assess early bone changes in CRF and prevent future fractures. Bone marker measurements in ROD would be useful to identify patients who may require bone biopsy.