Bone Histology and 1-84 PTH/7-84 PTH

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7-84 PTH is secreted by the parathyroid gland and has actions on the same target organs as does 1-84 PTH. At the level of the bone, 7-84 PTH has been demonstrated to inhibit the formation of osteoclasts and osteoblasts, resulting in both an inhibition of bone resorption and a lowering of bone turnover. The 1-84 PTH/7-84 PTH ratio was found to be highly predictive of bone turnover. This study combines bone biopsy results from San-in-Rosai Hospital in Yonago, Tottori, Japan and Beth Israel Medical Center in New York. A total of 27 patients with chronic kidney disease underwent double tetracycline labeling and iliac crest needle biopsy. Bone histomorphometry was performed at the Niigata Bone Institute by Dr. Takahashi. I-84 PTH and total PTH (1-84 and 7-84) were measured for each by Scantibodies Clinical Laboratory. 7-84 was calculated by subtraction of 1-84 from total PTH. 16 patients had histologically confirmed low bone turnover and 11 patients had histologically confirmed normal or high bone turnover disease. A 1-84 PTH/7-84 PTH ratio cutoff of <1.4 was able to identify patients with histologically confirmed adynamic bone disease with 94% accuracy.

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