

# The Impact of Implementing the 1-84 PTH/7-84 PTH Ratio as a Predictor for Adynamic Low Bone Turnover Disease

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It has been demonstrated by bone histology that 30% to 50% of dialysis patients have adynamic low bone turnover disease. It has also been demonstrated by bone histology that a significant number of dialysis patients with intact PTH values >100 pgm/mL have adynamic low bone turnover disease. 1-84 PTH/7-84 PTH ratio values of <1.0 have been demonstrated by Faugere, et al, with bone histology to be predictive of adynamic low bone turnover. However, that study was performed using dialysis patients who had never received bone affecting therapeutics. Recently, Tokumoto has demonstrated with bone histology that the cutoff for routine dialysis patients of the 1-84 PTH/7-84 PTH ratio is 1.4; that is, a ratio value of <1.4 for routine dialysis patients is predictive of adynamic low bone turnover disease. We studied the impact of a cutoff value of 1.4 on 819 specimens from dialysis patients in our clinic. Using the traditional criteria of <100 pgm/mL intact PTH for identification of adynamic low bone turnover, there were 155 specimens (19%) that would have been designated as adynamic low bone turnover. Using the criteria of <1.4 for the 1-84 PTH/7-84 PTH ratio for designation of adynamic low bone turnover disease, there were 166 specimens (20%) that would have been identified as adynamic low bone turnover. However, using the combined criteria of either <100 pgm/mL intact PTH or <1.4 for the 1-84 PTH/7-84 PTH ratio for classification as adynamic low bone turnover we identified 321 or 39% as adynamic low bone turnover. Using the 1-84 PTH/7-84 PTH ratio with a cutoff of 1.4 is a useful means of not missing those patients with adynamic low bone turnover who have intact PTH values of >100 pgm/mL.

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