

# Over 1 Year Experience of Using the 1-84 PTH/7-84 PTH Ratio and Achievement of K/DOQI Guidelines

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Consequences from bone diseases (i.e., anemia, mineral metabolism disturbances) and their impact on mortality have been one of the greatest challenges for the nephrologist. Large population studies have demonstrated increased mortality for elevated calcium (Ca), and phosphate (P). Maintaining Ca and P and CA x P within safe ranges remains a challenge. It has been assumed that central to the control of Ca and P metabolism is the control of the PTH levels. A highly controversial question has been “which PTH value is the correct one?” In 1998 confidence in iPTH assays was shaken with the demonstration that the iPTH assay was not accurately named. The iPTH assay does not measure only intact PTH (1-84), but also 7-84 PTH. Newer 1-84 PTH assays (CAP and Bio-Intact PTH) have replaced the iPTH assay. But 7-84 PTH plays a role in renal bone disease. 7-84 PTH lowers bone turnover and has actions opposite to 1-84 PTH. The 1-84 PTH/7-84 PTH ratio has been shown with bone biopsies to be the missing marker that accurately predicts bone turnover. This may explain why reports from units using either the iPTH or the newer, specific 1-84 PTH assay have reported overall 4 K/DOQI guideline achievement for their patients to be 5%. We have used this new ratio tool in the clinical management of our ESRD patients for over one year. Here, we present overall 4 K/DOQI achievement results after one year of using the ratio. 97 hemodialysis patients were evaluated. 62 patients (64%) achieved target calcium of 8.4-9.5 mg/dL. 58 patients (60%) achieved target phosphate of 3.5-5.5 mg/dL. Even though iPTH was not used to guide therapy, 47 patients (48%) achieved the goal of iPTH 150-300 pgm/ml. Overall achievement for all 4 K/DOQI targets was 22%. These results indicate that using the 1-84 PTH/7-84 PTH ratio to guide therapy accomplishes a greatly improved achievement of all 4 K/DOQI requirements. This is because bone biopsy studies have confirmed that there is a large group of adynamic bone disease patients with high iPTH values whose Ca and P product would presumably increase with vitamin D suppression.

97 patients			
Ca	(8.4-9.5)	62	64%
Pho	(3.5-5.5)	58	60%
Prod	(<55)	77	79%
iPTH	(150-300)	47	48%
<b>All 4</b>		21	22%

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