

PTH 1-84 and 7-84 in Dialysis Patients Undergoing Bone Biopsy for Suspected Hyperparathyroidism

Richard Amerling, M.D. Director of Outpatient Dialysis & CRRT, Beth Israel Medical Center, Ass't. Professor of Medicine at Albert Einstein College of Medicine, New York, NY.

We sought to examine the correlation between PTH peptides and bone histology in dialysis patients with clinical evidence of severe hyperparathyroidism and elevated "intact" PTH (Nichols). Eight dialysis patients underwent transiliac bone biopsy with Jamshidi needle, after double tetracycline labeling. Male/female = 4/4; aged 25-59 (mean: 47.7) years. All patients had elevated "intact" PTH, refractory hypercalcemia and/or hyperphosphatemia, and most had clinical symptoms of either bone pain or soft tissue calcification. All were considered candidates for parathyroidectomy. Whole blood specimens in EDTA tubes were obtained in all patients between 0-3 days of the biopsy. The blood was centrifuged and the supernatant separated and frozen within one hour of drawing. Specimens were shipped in dry ice to Scantibodies Clinical Laboratories for analysis of total PTH and 1-84 PTH. 7-84 PTH was taken as total PTH minus 1-84 PTH. Bone specimens were preserved in 100% ethanol and embedded in methyl methacrylate, then stained with standard mineralized histological technique. One patient was excluded because the quantity of trabecular bone was insufficient for histologic diagnosis.

Patient	Age	Total PTH	1-84	7-84	1-84/7-84	Ca	Phos	Alk Phos	Bone Bx
1	35	1269.5	989.3	280.2	3.5	9.5	5.3	323	Hyperparathyroid Dz
2	56	856.5	596	260.5	2.3	10.3	6.9	197	Hyperparathyroid Dz
3	59	2013	1228	785	1.8	10.3	8.1	321	Hyperparathyroid Dz
4	51	714.3	453.7	260.6	1.7	9.2	5.5	308	Mixed, hyperpara predom
5	54	892	581.1	311	1.9	9.5	7.4	205	Hyperparathyroid Dz
6	25	565.5	356.2	209.4	1.7	7.8	12.7	103	Hyperparathyroid Dz
7	54	901	545	356	1.5	9.8	7.7	488	Mixed, hyperpara predom
Means	47.7	1030.3	678.5	351.8	2.1	9.5	7.7	277.9	

Hyperparathyroid bone disease was present in all patients. All had elevated total PTH and a ratio of 1-84/7-84 equal to or greater than 1.5.

Amerling, R. "PTH 1-84 and 7-84 in Dialysis Patients Undergoing Bone Biopsy for Suspected Hyperparathyroidism". *J Amer Soc Nephrol* 2003(Nov); 14:567.