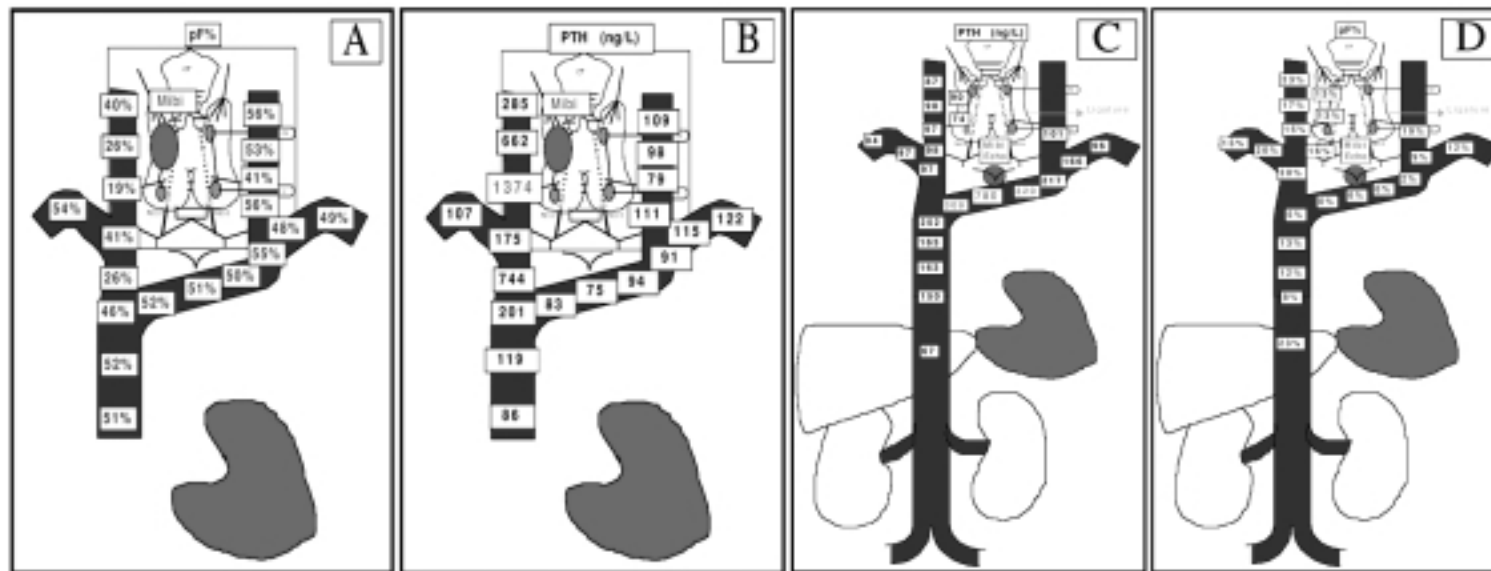


Selective Parathyroid Secretion of 1-84 PTH Alone or Along with 7-84 PTH – Implications for Therapeutic Strategies for Renal Bone Disease

Y. Fulla¹, T. Cantor², C. Vuilleumard¹, L. Nonnenmacher¹, P. Legmann¹, Ph. Bonnichon¹, Y. Chapuis¹. ¹CHU Cochin: 27 rue du Fbg Saint-Jacques ; 75014 Paris, France. ²Scantibodies Clinical Laboratory Inc., Santee, CA, USA.

7-84 PTH is hypocalcemic, inhibitory of osteoblasts, osteoclasts and resorption, lowers bone turnover, mediates through a PTH C-terminal receptor, and specifically down regulates the PTH 1 receptor on distal tubule cells (not on proximal tubule cells). We have previously demonstrated that 7-84 PTH is produced within the parathyroid glands of both ESRD and primary hyperparathyroid (1 HPT) patients (from analyses of surgically removed glands from 6 ESRD patients and 21 patients with 1° HPT). 1-84 PTH/7-84 PTH glandular ratios matched circulation. It was not clear if a gland could secrete exclusively 1-84 PTH, a mixture of both 1-84 PTH and 7-84 PTH, or exclusively 7-84 PTH. 2 patients were catheterized at the femoral vein with insertion into the internal right and left jugular veins, brachial cephalo trunks, right and left subclavical veins, and superior and inferior vena cava to the level of the liver. At approximately 1 cm intervals, blood specimens were taken and analyzed for both CAP (1-84 PTH) and total (intact) PTH, which is a measurement of 1-84 PTH plus 7-84 PTH. 7-84 PTH was calculated by subtracting the CAP value from the total PTH value. In the first patient, the sample from the vein into which the adenoma drained contained tPTH of 1374 pgm/mL of which 19% was 7-84 PTH. In the second patient, the sample from the vein into which the adenoma drained contained 780 pgm/mL of which 0% was 7-84 PTH. This gland is an example of exclusive secretion of 1-84 PTH. That the 1-84 PTH/7-84 PTH ratio decreases with increases in calcium and vitamin D therapy, and that the parathyroid is able to secrete 1-84 PTH exclusively, leads to the goal of altering therapy in order to control the ratio for the ultimate management of renal bone disease.



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