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TOTAL PTH, PTH(1-84) AND PTH(7-84) IN PATIENTS WITH CHRONIC KIDNEY DISEASE (CKD)

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Measurement of serum parathyroid hormone (PTH) levels is required for the care of patients (pts) with CKD stages 3 to 5. The 1st-generation immunometric PTH assays not only detect the intact hormone PTH(1-84), but also PTH truncated fragments. A 2nd-generation immunometric PTH assay recognizes only PTH(1-84), also named CAP, but not PTH(7-84), also named CIP and that has been proposed to be an antagonist of CAP. The aim of this study was to describe the concentrations of total PTH, CAP and CIP over the different stages of CKD. 383 pts with CKD stage 2 to 5 have been studied. All pts were managed according to the K/DOQI recommendations. GFR was assessed by measuring the renal clearance of 51Cr-EDTA; total PTH and CAP concentrations were measured with the DUO-PTH kit (Scantibodies lab.); CIP concentration was the difference between total PTH and CAP concentrations. The results of the cross sectional study performed in these 383 pts are shown below

CKD Stage	Stage 2	Stage 3	Stage 4	Stage 5
N=	34	187	125	37
Age (yrs)	51.6±13.3	58.1±13.3	60.4±14.5$	58.7±16.1
Total PTH (pg/ml)	29.1±14.1	47.1±26.0	93.0±71.8*	195.6±211.9*
CAP (pg/ml)	20.4±9.9	33.4±20.0	67.2±54.3*	141.2±146.5*
CIP (pg/ml)	8.7±5.1	13.7±8.8	25.8±22.5*	54.5±72.6*
CAP/CIP	2.8±1.4	2.5±2.6	3.3±4.2	2.6±2.3

$ $p<0.01$ vs stage 2, * $p < 0.001$ vs stage 2

Among the 383 pts, 110 (6 stage 2, 49 stage 3, 47 stage 4, 8 stage 5) were prospectively followed up for a median duration of 1.5 yrs (0.9-3.4). During follow-up, GFR declined significantly by 2.3 9.1 ml/min ($p<0.01$) while total PTH, CAP and CIP levels increased significantly (+17.776.5, +11.054.6, +6.725.7 pg/ml, respectively; all $p< 0.05$). However, CAP/CIP ratio did not change significantly over time (from 2.81.8 to 2.93.7). In conclusion, total PTH, CAP and CIP levels increase with the stage of CKD and during the course of CKD. However, in our population of CKD pts in France the CAP/CIP ratio appears to be independent of the stage of CKD and to remain steady over time.