ETHNIC DIFFERENCES IN PTH AND MINERAL METABOLISM IN PATIENTS RECEIVING CHRONIC HEMODIALYSIS.

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Mineral metabolism is known to differ in patients of different ethnicities with and without renal failure. In dialysis patients ethnicity related variations in the relative concentration of PTH fragments are thought to exist but have not been consistently demonstrated. We determined the concentration of PTH (1-84, 7-84 and total) using Scantibodies assays for 56 patients on chronic hemodialysis at Harlem Hospital Center and compared results with recently published data on an exclusively Caucasian dialysis cohort from Switzerland (*Fehr T et al. Kidney Blood Press Res 2006;29: 175-181*). Our predominantly Black cohort (84% African American, 14% Hispanic, 2% Caucasian, 64% male with mean age of 54.6±14.2 yrs) was younger than the comparison cohort (mean age 62±14 yrs, $p<0.001$) and had a similar gender distribution (M:F; 37:19 vs. 29:25$p=0.26$). The ionized calcium (4.6±0.4 vs. 4.6±0.4 mg/dL, $p=0.8$) and the serum phosphorus (5.1±1.5 vs. 5.6±1.6, $p=0.08$) were similar. Our cohort had a significantly higher Scantibodies total PTH (tPTH) (492±382 vs. 297±408 pg/mL, $p<0.001$) but cyclase activating PTH (CAP) was similar in the two cohorts (275±221 vs. 199±276 pg/mL, $p=0.11$). There was a significant difference in the cyclase inactive PTH (CIP) (216±170 vs. 97±137 pg/mL, $p<0.001$) which accounts for the higher tPTH in our predominantly African American population than in the Caucasian population. The higher CIP in our patients resulted in a significantly higher incidence of patients with a CAP/CIP ratio≤1 (14/56 vs. 3/54, $p=0.01$). This tPTH data is consistent with previously reported, but not universally found, higher intact PTH (iPTH) levels in African American than Caucasian populations. Further, our study illustrates that CIP driven differences in CAP/CIP ratios may be found between populations of different ethnicities even when they have similar CAP levels. Future bone biopsy studies will establish how these differences in CAP/CIP ratio may relate to differences in bone turnover.