"Evaluation of 16 months of clinical use of cinacalcet in haemodialysis and peritoneal dialysis patients : an observational study in Belgium (ECHO-B)"

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Association of Mortality with Serum Alkaline Phosphatase (AlkPhos) and Parathyroid Hormone (PTH) in Chronic Peritoneal Dialysis (CPD) Patients

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RESULTS: We identified 12,422 CPD pts who had baseline AlkPhos and PTH measures. They were 54 ± 16 years old, 47% women and 23% African Americans. Serum AlkPhos was divided into ten preselected groups by increments of 50 U/L. Higher AlkPhos was associated with increased death risk, including adjustment for case-mix and malnutrition-inflammation complex syndrome. Death hazard ratios (HR) and 95% CIs for AlkPhos groups > 130 U/L were 1.3 (1.1-1.4), 1.2 (1.1-1.4), 1.2 (1.1-1.4), 1.5 (1.1-1.7), and 1.3 (1.1-1.7) respectively. We also found that lower AlkPhos levels were independently associated with better survival. Death HRs (95% CI) for AlkPhos in 50-70 and 750-950 U/L were 0.70 (0.6-0.9), 0.70 (0.6-0.9), respectively (see Left Figure). By contrast, eight a preselected groups of PTH < 100 pg/ml had baseline 1,25(OH)2D3 levels in the range of 20-25 ng/ml and were 80% at 6 months, and 70% at 1 year. This increase does not induce hypophosphatemia in the absence of functioning kidney, but may result in transient PTH suppression and its related decrease bone resorption.

Disclosures of Financial Relationships: nothing to disclose

SA-PO152

Effect of Intravenous Iron Therapy on Serum FGF23 Levels and Mineral Metabolism in ERSD Patient Undergoing Hemodialysis

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INTRODUCTION AIMS: Fibroblast growth factor 23 (FGF23) induces urinary phosphate excretion, suppresses 1,25-dihydroxyvitamin D synthesis, and inhibits parathyroid hormone (PTH) secretion. Recent data suggest that FGF23 plays a role in the development of iron-induced hypophosphatemia in subjects with normal kidney function. The aim of this study was to examine the effect of intravenous iron therapy on serum FGF23 levels and mineral metabolism in patients undergoing hemodialysis.

METHODS: This prospective study enrolled 27 patients who were receiving hemodialysis for more than three months and had iron-deficiency anemia defined by a hemoglobin concentration less than 10.5 g/dl and serum ferritin less than 100 mg/ml. Intravenous saccharated ferrioxalate(SFO) at a dose of 40 mg was administered three weekly over three weeks. Serum FGF23, intact PTH and other parameters were prospectively monitored for five weeks.

RESULTS: Intravenous iron therapy resulted in a significant increase in hemoglobin and ferritin levels at wk 3 (10.0 ± 0.5 g/dl vs. 10.6 ± 0.5 g/dl, P < 0.001, 30.1 ± 22.7 mg/dl vs. 77 ± 22.7 mg/dl, P < 0.001, respectively; see Left Figure). By contrast, eight a preselected groups of PTH < 100 pg/ml had baseline 1,25(OH)2D3 levels in the range of 20-25 ng/ml and were 80% at 6 months, and 70% at 1 year. This increase does not induce hypophosphatemia in the absence of functioning kidney, but may result in transient PTH suppression and its related decrease bone resorption.

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SA-PO153

Racial Differences in Vitamin D, Parathyroid Hormone and Fibroblast Growth Factor 23 Levels in Patients with Severe Chronic Kidney Disease


Purpose: Abnormalities of mineral metabolism have not been described across races in patients with severe CKD.

Methods: Study was conducted among patients with severe CKD, but not on dialysis, who participated in the Homocysteine in Kidney and End Stage Renal Disease study. 25-hydroxyvitamin D (25(OH)D), calcitriol (1,25(OH)2D), intact parathyroid hormone (iPTH), and fibroblast growth factor (FGF-23) levels were measured in plasma samples. Multivariable regression analyses were performed to examine the association between race and vitamin D, iPTH, and FGF-23 levels.

Results: There were a total of 1095 patients within each of 18 Racial Groups (18 Racial Groups x 655 [431 [232-1026], and 364 [219-895] RU/mL, respectively (p = 0.0001). After adjustment for calcium, phosphorus, 25(OH)D and other parameters were 324 [183], 655, 431 [232-1036], and 384 [219-895] RU/mL, respectively (p = 0.0001). However, there was no significant difference in 1,25(OH)2D3 levels among races. NHB had higher iPTH levels than NHW and others (248 ± 208 vs. 167 ± 131 vs. 210 ± 159 mg/dl respectively, p = 0.0001). The median (10th-90th) iPTH levels in NHB, NHW and others were 83 [65-115], 57 [43-96], and 44 [27-81] ng/ml respectively (p = 0.0001).

Conclusions: Low 25(OH)D and elevated iPTH levels are more severe in NHB when compared to non-blacks with severe CKD.

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SA-PO154

Preliminary Validation of Three Commercially Available Assays for Measurement of Human Plasma FGF23

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FGF23 is a bone-deprived peptide hormone that is emerging as an integral regulator of phosphorus balance and vitamin D hydroxylase, yet its clinical significance in CKD and ESRD is poorly understood. The purpose of this study is to perform preliminary validation of 3 commercially available assays for measurement of FGF23 in human plasma