

Relationships between Diasorin LIAISON 1-84PTH, Intact PTH, Bone ALP, and 25(OH)Vitamin D in a CKD Cohort from the CanPREDDICT Study

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BACKGROUND: We desired to investigate relationships between a new automated 1-84PTH assay, intact PTH (iPTH), and other bone markers in a CKD cohort.

METHOD: Specimens from 2374 pts from the CanPREDDICT study were analyzed for 1-84PTH, bone ALP (BAP), and 25(OH)VitaminD (VitD) on the Diasorin LIAISON analyzer. Recruiting sites performed iPTH, Ca, PO₄, and Cre using local methods.

RESULTS: Large biases exist between iPTH and 1-84PTH. After method-specific iPTH correction, correlations between iPTH, 1-84PTH and bone markers were similar. Difference plots show large scatter. Nonlinear regression shows little decrease in 1-84PTH or BAP for VitD > 75 nM. VitD status is difficult to predict from PTH or BAP. 1-84PTH and iPTH assays are not directly comparable.

CONCLUSION: Discrepancy can be modeled as a fn. of eGFR.

Descriptive Statistics and Correlations

Analyte	1-84PTH (pM)	BAP (ug/L)	VitD (nM)	Ca (mM)	PO4 (mM)	Cre (μM)	% in CKD Stages 3,4 & 5
Median (IQR)	4.7 (2.8-8.0)	12.8 (9.2-17.4)	60 (41-83)	2.3 (2.2-2.4)	1.17 (1.0-1.3)	199 (160-253)	36, 59, 5
N. Range	0.70-3.90	see below	>75	2.18-2.58	0.80-1.60	60-100 M, 50-90 F	-
Correlations [CI]	1-84PTH	BAP	VitD	Ca	PO4	Cre	eGFR
1-84PTH	1	0.49 [0.40,0.57]	-0.34 [-0.44,-0.24]	-0.35 [-0.44,-0.24]	0.21* [0.05-0.35]	0.39 [0.29-0.48]	-0.43 [-0.51,-0.34]
iPTH (All - corrected)	0.92 [0.90-0.94]	0.48 [0.39,0.56]	-0.33 [-0.43,-0.23]	-0.34 [-0.43,-0.24]	0.23 [0.08-0.37]	0.40 [0.31-0.49]	-0.43 [-0.52,-0.34]

R for PTH vs VitD and eGFR are log/log. All p < 0.01 for R's except *, where p = 0.01. For correlations, n = 301-321

