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Comparison of Diasorin LIAISON Vitamin D Assay Against LC-Tandem MS in a CKD Cohort from the CanPREDDICT Study

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OBJECTIVE: The purpose was to compare an automated 25(OH)VitaminD (VitD) method with a reference method in patients with CKD.

METHOD: A 416 pt cohort was taken from the Canadian Study of Prediction of Risk and Evolution to Dialysis, Death and Interim Cardiovascular Events Over Time (CanPREDDICT) study. Serum was collected at 25 Canadian sites and stored at -80℃ until analysis. LCMSMS was performed on the Applied Biosystems API5000 using a modification of their iMethod. Automated VitD, Bone ALP (BAP), and 1-84PTH analysis was performed using the Diasorin LIAISON analyzer (kits provided by Diasorin). Passing Bablok regression was: LIAISON=0.980[CI 0.932-1.031]xLCMSMS-2.89[CI -5.45,-0.134]nM.

RESULTS: Correlation between methods was:ρ=0.90 overall, 0.55 for definite deficiency (<25nM,n=27),0.77 for moderate deficiency (25-75nM,n=227), and 0.57 for VitD sufficient pts (>75nM,n=162). Interpretive concordance rates (CI) in these 3 categories were: 0.85(0.65-0.95), 0.88(0.83-0.92), and 0.80(0.73-0.86). Discrepancies did not appear related to eGFR.

CONCLUSION: The Diasorin LIAISON VitD method produces more accurate results compared to LCMSMS than has been previously reported, with slightly lower ρ. Clinical concordance rates of LCMSMS and LIAISON VitD results were reasonable to good.

	Median	IQR	Normal Range
Age (y)	66.8	[59,76]	NA
eGFR (mL/min)	25.9	[20.0-33.0]	NA
Cre M (umol/L)	220	[176-281]	60-100
Cre F (umol/L)	171	[143-214]	50-90
Ca (mmol/L)	2.30	[2.2-2.4]	2.18-2.58
PO4 (mmol/L)	1.18	[1.00-1.33]	0.80-1.60
BAP (ug/L)	14.1	[9.8-18.4]	see below
1-84PTH (pmol/L)	4.63	[2.96-7.80]	0.70-3.90

Table 1: Relevant clinical and biochemical markers in the 202 F and 214 M subjects. BAP N Range, M: 6-30, F: 3-19 (premenopause); 6-26 (postmenopause) ug/L.

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