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CanPREDDICT: Canadian Study for Predicting Dialysis, Death and Cardiovascular (CVD) Risk in CKD

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BACKGROUND: CanPREDDICT is a prospective observational cohort study of 2500 pts known to nephrologists at 25 Canadian centers. Primary objectives are to describe the levels and temporal evolution of 5 known biomarkers (BM) for inflammation (CRP, IL-6), cardiac injury (Troponin I), heart failure (ProBNP), and vascular health (ADMA); and establish whether these BM , can accurately discriminate pts at high or low risk of renal or CVD outcomes.

METHODS: 2542 CKD pts (eGFR 15-45 ml/min) were enrolled: mean age is 68yrs, median eGFR is 28ml/min, 62% are male, 90% are Caucasian; 48% have DM; 34% have IHD and 27% have CHF. Table 1 presents BM associated with comorbidities at baseline:

Biomarkers associated with comorbidities at baseline

Variables	Diabetes OR (95% C.I.)	Ischemic HD OR (95% C.I.)	Congestive HF OR (95% C.I.)
Age (5 yrs)	1.02 (0.97-1.06)	1.22 (1.17-1.29)*	1.19 (1.11-1.28)*
Sex (Male vs. Female)	1.25 (1.01-1.57)*	1.69 (1.36-2.09)*	0.86 (0.63-1.18)
Race (Other vs. Caucasian)	1.26 (0.90-1.76)	0.90 (0.63-1.27)	0.71 (0.44-1.14)
DM	n/a	1.94 (1.58-2.38)*	1.18 (0.88-1.60)
eGFR (5mL/min)	1.10 (1.01-1.17)*	1.04 (0.98-1.11)	1.17 (1.07-1.28)*
Po4 (0.1 mmol/L)	1.11 (1.06-1.16)*	ns	ns
iPTH (log pmol/L)	ns	ns	1.22 (1.01-1.47)*
Alb (g/L)	0.96 (0.94-0.99)*	ns	ns
Hb (5g/L)	0.94 (0.90-0.97)*	ns	ns
IL6 (>LLD - 6pg/mL vs. <LLD)	1.56 (1.20-2.03)*	1.35 (1.04-1.75)*	ns
IL6 (>6.0 pg/mL vs. <LLD)	2.17 (1.66-2.83)*	1.42 (1.09-1.84)*	ns
Troponin (>LLD vs. <LLD)	1.61 (1.28-2.02)*	1.79 (1.44-2.23)*	2.36 (1.70-3.28)*
ProBNP (1000 pg/mL)	ns	1.08 (1.04-1.12)*	1.18 (1.10-1.26)*

RESULTS: The addition of BM to multivariate models with traditional variables increased the AUC for DM (63% to 67%), IHD (69% to 73%) and CHF (67% to 75%) models.

CONCLUSIONS: The ability to identify pts who will progress wrt CVD or CKD is important in planning interventional trials. Use of BM to discriminate and identify high risk pts appears to be possible.