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URINARY ACR AND PCR ARE PROGNOSTICALLY EQUIVALENT: IMPLICATIONS FOR CLINICIANS AND LABORATORIES

Claudio Rigatto[1], Adeera Levin[2], Catherine Clase[3], Brendan Barrett[4], François Madore[4], Norman Muirhead[5], Daniel Holmes[6], Mila Tang[6], Navdeep Tangri[1], Ognjenka Djurdjev[7]

[1]University of Manitoba, Winnipeg, MB, Canada, [2]University of British Columbia, Vancouver, BC, Canada, [3]McMaster University, Hamilton, ON, Canada, [4]Memorial University of Newfoundland, St. John's, NL, Canada, [4]Université de Montréal, Montréal, QC, Canada, [5]Western University, London, ON, Canada, [6]St. Paul's Hospital, Vancouver, BC, Canada, [7]BC Provincial Renal Agency, Vancouver, BC, Canada

BACKGROUND: Proteinuria is an important prognostic variable in patients with chronic kidney disease (CKD). Both albumin-to-creatinine ratio (ACR) and protein-to-creatinine ratio (PCR) are widely used to estimate proteinuria. No study has directly compared the ability of these measures to predict progression to end-stage renal disease (ESRD).

METHODS: We examined the ability of baseline measures of ACR and PCR to predict progression to ESRD over one year in 2544 patients participating in CanPREDDICT, a prospective cohort study of adult patients with advanced CKD from multiple causes. ACR and PCR were log transformed for analysis. We created a base Cox multivariable model (BCM) for prediction of RRT using standard clinical variables, and then compared differences in the performance (discrimination [c statistic, IDI] and reclassification [NRI]) of enriched Cox models (ECM) created by addition of either logACR or logPCR.

RESULTS: Both ACR and PCR independently predicted need for RRT at one year, and each remained highly significant after adjustment for the BCM variables. Both log ACR and log PCR improved BCM performance significantly and to the same degree (Table 1). Sensitivity analyses using alternate choices for BCM variables did not change these results.

LIMITATIONS: I year follow-up, single baseline measure, predominantly Caucasian cohort

CONCLUSIONS: ACR and PCR are equally and interchangeably valid predictors of progression to RRT at 1 year. Clinicians can choose whichever test is most appropriate for the specific renal diagnosis, without loss of general prognostic information applicable to CKD.