

PROGNOSTIC VALUE OF PREDICTION EQUATIONS AND “SURPRISE QUESTION” IN CKD PATIENTS IN IDENTIFYING NEED FOR RENAL REPLACEMENT – CANPREDDICT STUDY

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BACKGROUND: The intensity of care for patients with chronic kidney disease (CKD) is often based on an overall intuitive, qualitative assessment. Health resources and surgical risks are taken for renal replacement therapy (RRT) planning, and are unnecessary in patients who do not progress. We explore here the value of evidence-based prediction equations compared to physician qualitative assessment in guiding the timing and planning for RRT. Objective: To assess the accuracy of physicians qualitative assessment of CKD patients risk of needing RRT and compare it with a validated prediction equation (Kidney Failure Risk Equation, KFRE).

METHODS: Pan-Canadian prospective cohort study of 2544 referred CKD patients, from 25 rural, urban, academic and non-academic nephrology centres, followed every 6-months. A survey was implemented in 2011 for physician to indicate if they would be surprised if the patient required RRT within 1-year. Demographic, clinical, and laboratory data was collected at each visit and used to generate a risk score. Discrimination and reclassification were compared between the qualitative survey and the KFRE. Primary Outcome: Need for RRT within 1-year from survey.

RESULTS: We surveyed 90 nephrologists who followed 564 patients, with the median eGFR of 25 ml/min (IQR18-34), for a period of 1-year post physician survey. Of the 161 patients predicted to require RRT by nephrologists, 38 (24%) actually required RRT within the year. Identification of patients requiring RRT by qualitative assessment poorly discriminated progressors vs non-progressors [(AUC) of 69.4% (95%CI:61.1-77.6) for surprise question vs. AUC 91.2% (95%CI:88.5-94.9) for KFRE] . The continuous net reclassification improvement with the KFRE was 0.96 (95%CI:0.45-1.29) and integrated discrimination improvement was 0.19 (95%CI:0.133- 0.35).

CONCLUSIONS: Physicians greatly overestimate risk of CKD patients needing RRT. There is a need for evidence-based prognostic tools in guidelines to better allocate resources in preparing CKD patients for RRT.