

The use of the kidney failure risk equation to risk stratify patients referred to a tertiary renal centre

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Introduction: The current NICE guidelines suggest that all patients with chronic kidney disease (CKD) and an eGFR<30 mls/min/1.73m² should be referred for specialist assessment. However better information regarding individual risk for progression to kidney failure may improve clinical decision-making. The 4-variable Kidney Failure Risk Equation (KFRE), which incorporates age, gender, albuminuria and geographical location, has been developed as a calculator to predict risk of progression. The aims of this evaluation were to i) examine the 5-year outcome of patients CKD referred to a tertiary centre and ii) retrospectively calculate the 5-year risk of progression using the KFRE in our cohort and compare this to actual outcomes.

Method: We examined the clinical characteristics and outcomes over 5 years of all patients with CKD referred to our centre in 2012. All the data was collected retrospectively through electronic patient records. 5 year risk of progression to kidney failure at baseline was calculated using the KFRE. Those who score between 0 to 5% are considered low risk, 5 to 15% are intermediate and >15% have a high 5 year risk of progression to kidney failure.

Results: In 1 year, 635 new patients with CKD were referred to nephrology outpatients. 41% were females and 32% were above the age of 75. At the time of referral 28% had CKD stages 1 and 2, 11% had stage 3a, 20% had stage 3b, 32% had CKD 4 whilst 9% had CKD 5. Over the 5-year period 82 patients (13%) started renal replacement therapy (RRT) of whom 22 had died. 31% of patients referred had died before needing RRT. 36% patients were still under nephrology care whilst 45% had been discharged. 10% of patients with CKD stages 1-4 had progressed by at least 1 stage during the follow up period. Only half of the referred patients actually needed a nephrology-specific intervention (e.g. anaemia or bone management, dialysis or a kidney biopsy) beyond just blood pressure control. Using the KFRE in the 530 patients in whom all data was available, 171 were high risk (32%), 80 were intermediate risk (15%) and 279 were low risk (52.6%) of progression at time of referral. Of those with a high 5-year risk of progression, 34.5% were dead at five years follow up and 42.1% were on RRT. Of those who had low or intermediate risk only 2.6% required RRT during the 5-year follow up

Conclusion: Over a 5-year follow up period only half of patients with CKD referred to tertiary care required a nephrology specific intervention beyond just blood pressure control and just 13% required RRT. In this limited retrospective analysis the KFRE helps identify patients at higher risk of progression. Further work needs to be done to evaluate whether the KFRE can be used in primary care to identify which CKD patients are most likely to benefit from referral to secondary care.