Assessment and Management of Risk Factors in People with Chronic Kidney Disease and Diabetes Mellitus Multimorbidity

Shur N, Major RW, Papamargaritis D, Webb D, Khunti K, Shepherd D, Brunskill NJ

Introduction and Aims:

Chronic kidney disease (CKD) and diabetes mellitus (DM) are important risk factors for cardiovascular (CV) disease and are associated with increased CV events. Multimorbidity with both DM and CKD is increasing in prevalence. Appropriate monitoring and use of renin-angiotensin system antagonists, as well as optimising blood pressure and lipid levels, are important strategies in the management of people with CKD. Whether the presence or absence of DM influences the clinical assessment of CKD is unknown. We aimed to establish rates of other comorbidities and commonly used medication prescription rates. We also aimed to establish if DM affected the likelihood of confirmatory eGFR or urinary protein assessment being performed.

Methods:

We analysed the baseline cohort of the PSP-CKD study, a large United Kingdom primary care CKD clinical trial, to study a subgroup with DM. DM was defined using HbA1c, the use of DM medications or a Read code diagnosis of DM. Co-morbidities were based on Read codes and medications on prescription records. Comparison was made to members of the cohort with CKD but not known to have diabetes.

Results:

The DM subgroup consisted of 5,842 individuals, 55.6% of whom were female. Mean age was 74.1 years (standard deviation (SD) 10.5 years). Mean MDRD eGFR was 49.2 ml/min/1.73m², 73.5% were CKD stage 3A. Individuals with DM, compared with those without DM, had a lower mean MDRD eGFR (49.4 ml/min/1.73m² versus 54.4 ml/min/1.73m², t-test p<0.001) and were more likely to have had a second confirmatory eGFR (76.1% versus 62.7%, Pearson Chi-squared p<0.001) and their urinary protein assessed (86.0% versus 66.5%, Pearson Chi-squared p<0.001). Of those with a urine
assessment, 69.9% had stage A1 proteinuria. Mean HbA1c was 7.3% (SD 1.4%). Mean systolic blood pressure was 134.2 mmHg (SD 16.5 mmHg) and diastolic 73.1 mmHg (SD 10.2 mmHg). 76.4% were hypertensive and 38.9% had had a previous cardiovascular event. 74.3% were prescribed either an ACE inhibitor or ARB. 2.6% were prescribed both an ACE inhibitor and ARB, 74.2% were receiving a statin and 48.8% aspirin.

Conclusions:

Patients with CKD and DM have a significantly lower eGFR compared with patients with CKD alone. In addition, patients with CKD and DM were monitored more closely with confirmatory eGFR or urinary protein assessment compared to patients with CKD alone. RAS blockade medication and statins were prescribed to three quarters and aspirin to just under a half. Overall, the assessment and management of multimorbid patients with both CKD and DM is more thorough than those with CKD alone.