Prevalence of Chronic Kidney Disease in Adults with Type 2 Diabetes Mellitus

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Abstract

Introduction: Diabetes mellitus (DM) is a major cause of chronic kidney disease (CKD). The epidemiology of CKD secondary to type 2 DM (T2DM) (i.e. diabetic nephropathy (DN)) has not been well studied in Singapore, a multi-ethnic Asian population. We aimed to determine the prevalence of CKD in adult patients with T2DM. Materials and Methods: We conducted a cross-sectional study on patients (n = 1861) aged 21 to 89 years with T2DM who had attended the DM centre of a single acute care public hospital or a primary care polyclinic between August 2011 and November 2013. Demographic and clinical data were obtained from patients using a standard questionnaire. Spot urine and fasting blood samples were sent to an accredited hospital laboratory for urinary albumin, serum creatinine, HbA1c and lipid measurement. CKD was defined and classified using the 2012 Kidney Disease: Improving Global Outcomes (KDIGO) guidelines and classification. Results: The distribution by risk of adverse CKD outcomes was: low risk, 47%; moderate risk, 27.2%; high risk, 12.8%; and very high risk, 13%. The prevalence of CKD in patients with T2DM was 53%. Variables significantly associated with CKD include neuropathy, blood pressure ≥140/80 mmHg, triglycerides ≥1.7 mmol, body mass index, duration of diabetes, HbA1c ≥8%, age, cardiovascular disease, and proliferative retinopathy. Conclusion: CKD was highly prevalent among patients with T2DM in Singapore. Several risk factors for CKD are well recognised and amenable to intervention. Routine rigorous screening for DN and enhanced programme for global risk factors reduction will be critical to stem the tide of DN.

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