

Management of Diabetes in Patients with Cardiovascular Diseases

Patients with Chronic Kidney Disease

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Diabetes-related chronic kidney disease (CKD) is a very common complication for patients with type 2 diabetes. It leads to end-stage renal disease (ESRD), accounting for approximately 50% of cases in the developed world. From data sets of the Taiwan NHIRD, the prevalence of diabetic nephropathy increased from 13.32% in 2000 to 15.42% in 2009. In another Taiwan cohort study of 462,293 individuals aged older than 20 years, the prevalence of stage 3-5 CKD (defined by an eGFR < 60 mL/min/1.73 m²) was 7.1% (stage 3 6.8%, stage 4 0.2%, and stage 5 0.1%), and the DM prevalence was 14.5%, 25.6%, and 23.6%, respectively.

Metformin should be the first-line therapy in diabetic patients with CKD stage 3 because it has long-standing evidence for efficacy and safety, and is inexpensive, though a dosage reduction is necessary. For dual therapy, we recommend metformin plus SGLT-2 inhibitors. The use of SGLT-2 inhibitors is compelling based on their effects in reducing 3-point MACE and renal endpoints. They can be used as the first line therapy if metformin cannot be tolerated. For the triple therapy on top of metformin/SGLT-2 inhibitors, we recommend GLP-1 RAs, followed by TZD, and DPP-4 inhibitors.