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Renal protective effect of metformin in type 2 diabetes patients

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Abstract

Background

Inhibiting the development and progression of diabetic kidney disease (DKD) is an important issue, but the renoprotective effect of metformin is still controversial

Aims

To assess the renoprotective effect of metformin in patients with type 2 diabetes

Methods

This retrospective observational multicenter cohort study included 316,693 patients with type 2 diabetes from seven hospital. After age, gender, medical year, baseline estimated glomerular filtration rate (eGFR), urine protein (dipstick), glycated hemoglobin (HbA1C) and propensity score matching; a total of 13,096 metformin and 13,096 non-metformin patients were included. The main results were doubling of serum creatinine, eGFR $\leq$ 15 mL/min/1.73 m^2 and end stage kidney disease (ESKD).

Results

After conducting a multivariable logistic regression analysis on the variables, the metformin group was revealed to have better renal outcomes than non-metformin group, including a lower incidence of doubling of serum creatinine (hazard

functions. Furthermore, when considering factors such as age, sex, comorbidities, and medications in subgroup analyses, it consistently showed that the metformin group experienced a slower deterioration in renal function across nearly all patient subgroups.

Conclusions

Metformin decreased the risk of renal function deterioration.

Keywords: chronic kidney disease, diabetes mellitus, diabetic kidney disease, end stage kidney disease, kidney, metformin, renal function

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