Renal and Cardiovascular Benefits of Semaglutide in Type 2 Diabetes With CKD


A Research Study to See How Semaglutide Works Compared to Placebo in People With Type 2 Diabetes and Chronic Kidney Disease (FLOW), an international, multi-center trial, enrolled 5533 patients (mean age, 67 years) with type 2 diabetes and CKD. Eligible patients had an estimated glomerular filtration rate (eGFR) of 50 to 75 mL/min/1.73 m^2. Participants were randomly assigned to receive subcutaneous semaglutide (1.0 mg weekly) or placebo. Primary outcomes were major kidney disease events, a composite of kidney failure, 50% or greater reduction in eGFR, or death from renal or cardiovascular causes.

The trial was halted at a median follow-up of 3.4 years based on the results of a prespecified interim analysis of efficacy. At that time, the primary outcome event rate was 5.8 per 100 patient-years with semaglutide versus 7.5 per 100 patient-years with placebo (hazard ratio [HR], 0.76). Similar patterns were shown for a composite of kidney-specific components of the primary outcome (HR, 0.79) and for death from cardiovascular causes (HR, 0.71).

Semaglutide also improved secondary outcomes, including a 1.16 mL/min/1.73 m^2 decrease in the mean annual eGFR slope. Major cardiovascular events (HR, 0.82) and all-cause mortality (HR, 0.80) also decreased. Numbers needed to treat were 45 to prevent one major cardiovascular event and 39 to prevent one death.

Patients in the semaglutide group had greater reductions in body weight (mean difference, 4.10 kg), glycated hemoglobin, and systolic blood pressure. Semaglutide was also associated with a lower rate of serious adverse events, mainly reflecting fewer events related to infections or cardiovascular disorders.

Previous studies of glucagon-like peptide-1 receptor agonists in type 2 diabetes have not addressed clinically important kidney outcomes. The FLOW trial “provides confidence that the use of semaglutide in patients with type 2 diabetes and chronic kidney disease will reduce the risk of kidney failure and slow the decline in the eGFR, as well as reduce the risk of cardiovascular events and death,” the researchers write. They discuss the mechanisms of semaglutide’s kidney-protective effects, which are likely multifactorial [Pekovic V, et al.; FLOW Trial Committee and Investigators]. Effects of semaglutide on chronic kidney disease in patients with type 2 diabetes. N Engl J Med, published online May 24, 2024. doi: 10.1056/NEJMoa2403347.

For your patients at risk for rapidly progressing ADPKD

Scan the QR code to see how JYNARQUE could change the course of your disease

JYNARQUE® (tolvaptan) could change the course of their disease

JYNARQUE is the first and only FDA-approved treatment indicated to slow kidney function decline in adults at risk of rapidly progressing ADPKD.

Findings

Tolvaptan Efficacy and Safety Management of Autosomal Dominant Polycystic Kidney Disease

Among patients with lupus nephritis, exposure to the calcineurin inhibitor (CNI) tacrolimus is associated with greater long-term reduction in kidney function, reports a study in Nephrology Dialysis Transplantation.

The retrospective cohort study included 219 patients with lupus nephritis treated at the authors’ center between 2010 and 2023. Of these, 63 patients were exposed to tacrolimus, and 176 had never been treated with any CNI. Renal outcomes, diabetes status, cardiovascular events, and risk factors were compared between groups at a median follow-up of 7.1 years. The median follow-up was 6.06 months in the tacrolimus group and 8.89 months in those with no CNI exposure. The median duration of tacrolimus exposure was 17.7 months. Disease flares were the most common indication for tacrolimus therapy, followed by pregnancy and side effects of previous immunosuppression. Patients receiving tacrolimus had a greater decline in the estimated glomerular filtration rate (eGFR): median, −6.8 mL/min/1.73 m^2 compared with −0.8 mL/min/1.73 m^2 in the nonexposed group. The median annual eGFR slope was 1.1 for the tacrolimus group versus 0.1 mL/min/1.73 m^2 for the group without CNI. The rate of eGFR decline was related to the duration of tacrolimus treatment. Three patients in the tacrolimus group progressed to kidney failure, all during active tacrolimus treatment.

After adjustment for potential confounders, tacrolimus exposure was associated with a −1.47 mL/min/1.73 m^2 decline in eGFR. On the sensitivity analysis, the tacrolimus-associated change in eGFR was greater in patients without a major disease flare: −20.0 mL/min/1.73 m^2.

FINDINGS

IMT Study

Findings

JYNARQUE is the first and only FDA-approved treatment indicated to slow kidney function decline in adults at risk of rapidly progressing ADPKD.