Semaglutide improves chronic kidney disease in people with type 2 diabetes

FLOW study promises new treatment strategies for people with type 2 diabetes and chronic kidney disease.

People with chronic kidney disease, of which type 2 diabetes is the most common cause, are at high risk for kidney failure, cardiovascular events and death. While a number of medications have been shown to protect kidneys and reduce the risk of adverse cardiovascular outcomes, the effects of glucagon-like peptide-1 (GLP-1) receptor agonists have not been well understood.

The FLOW trial set out to assess the efficacy and safety of semaglutide for the prevention of kidney failure, substantial loss of kidney function and death from kidney-related or cardiovascular causes in people with type 2 diabetes and CKD. The 3533 adult participants with type 2 diabetes and CKD were randomly assigned to receive subcutaneous semaglutide at a dose of 1.0 mg weekly (*n*=1767) or matching placebo (*n*=1766). An 8-week dose-escalation regimen was used. Follow-up was for a median of 3.4 years, after the monitoring committee recommended early completion of the trial for efficacy.

The primary outcome was major kidney disease events, a composite of the onset of kidney failure, a sustained ≥50% reduction in eGFR from baseline, or death from kidney-related or cardiovascular causes. The risk of such an event was 24% lower in the semaglutide group than in the placebo group (331 vs 410 first events; HR, 0.76 [95% CI, 0.67–0.88; *P*=0.0003]).

Lower risk with semaglutide was also observed for a composite of the kidney-specific components of the primary outcome (0.79; 95% CI, 0.66–0.94) and for death from cardiovascular causes (0.71; 95% CI, 0.56–0.89).

The benefits of semaglutide were also observed for the three confirmatory secondary outcomes. The mean annual eGFR slope was significantly less steep (indicating a slower decrease) in the semaglutide group than the placebo group (–2.19 vs –3.36 mL/min/1.73 m^2; between-group difference, 1.16; 95% CI, 0.86–1.47; *P*<0.001).

There was an 18% lower risk of major cardiovascular events with semaglutide compared to placebo (212 vs 254; HR, 0.82; 95% CI, 0.68–0.98; *P*=0.029), and the risk of death from any cause was 20% lower (0.80; 95% CI, 0.67–0.95; *P*=0.01).

There were fewer serious adverse events in the semaglutide group than the placebo group (877 [49.6%] vs 950 [53.8%]). This was primarily owing to fewer reported serious infections or serious cardiovascular disorders with semaglutide.

The study's findings that semaglutide reduced the risk of clinically important kidney outcomes and death from cardiovascular causes offers the potential to develop new treatment strategies for people with type 2 diabetes and CKD.

The full study findings can be read here. ■