

Study reveals long-term effectiveness of therapy for common cause of kidney failure

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New research provides support for the long-term efficacy of a drug used to treat in patients with autosomal dominant polycystic kidney disease (ADPKD), a common cause of kidney failure. The findings appear in an upcoming issue of the *Clinical Journal of the American Society of Nephrology (CJASN)*.

The hormone vasopressin promotes the progression of ADPKD, the fourth leading cause of end stage [kidney disease](#). In the three-year TEMPO 3:4 and in the one-year REPRIZE phase 3 [clinical trials](#), tolvaptan (a vasopressin receptor antagonist) slowed the decline of [kidney function](#) in patients with ADPKD at early and later stages of [chronic kidney disease](#), respectively. The results suggest that tolvaptan might delay the need for dialysis or kidney transplantation, provided that its effect on kidney function decline is sustained and cumulative over time, beyond the relatively short duration of TEMPO 3:4 and REPRIZE. Because all patients participating in these clinical trials were given the opportunity of continuing tolvaptan in an open-label extension study, investigators have now gathered information on the long-term efficacy of tolvaptan.

A team led by Vicente Torres, MD, Ph.D. (Mayo Clinic) retrospectively analyzed information on 97 ADPKD patients treated with tolvaptan for up to 11 years at the Mayo Clinic. Kidney function was measured as estimated glomerular filtration rate (eGFR).

The investigators found that patients treated with tolvaptan had lower

eGFR slopes compared with controls (-1.97 vs -3.50 ml/min per 1.73 m² per year) and a lower risk of a 33% reduction in eGFR from baseline. Also, the annualized eGFR slopes of patients treated with tolvaptan did not change with the duration of follow-up. The team also compared the eGFR values observed at the last follow-up in the tolvaptan treated patients to the anticipated last follow-up eGFR values, estimated using a previously validated predictive equation. Differences between observed and predicted eGFRs at last follow-up increased with duration of treatment, suggesting that the beneficial effect of tolvaptan on the eGFR accumulates over time.

"The results of the study suggest that the effect of tolvaptan on eGFR in patients with ADPKD is sustained, cumulative, and consistent with potentially delaying the need of [kidney](#) replacement," said Dr. Torres.

More information: Marie E. Edwards et al, Long-Term Administration of Tolvaptan in Autosomal Dominant Polycystic Kidney Disease, *Clinical Journal of the American Society of Nephrology* (2018). DOI: [10.2215/CJN.01520218](https://doi.org/10.2215/CJN.01520218)

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