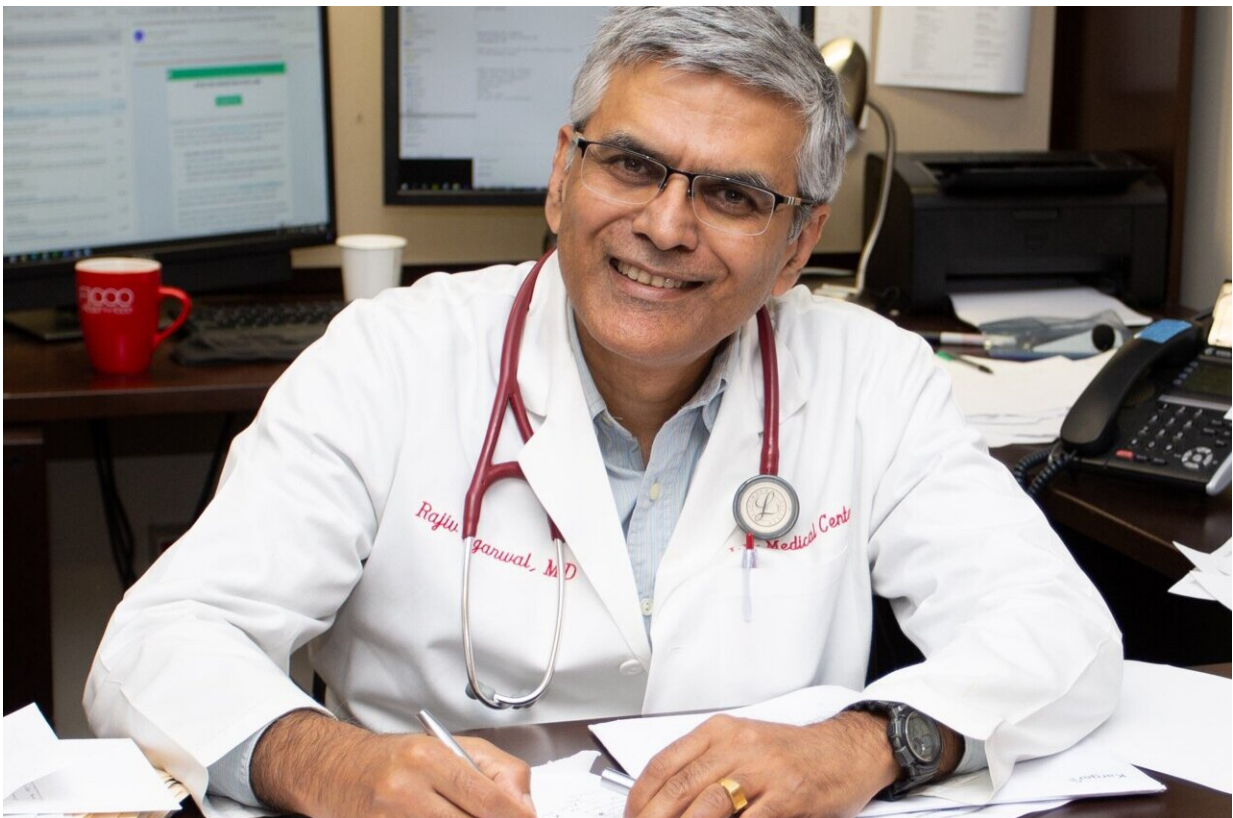


Study shows effectiveness of low-cost medicine in treating high blood pressure in people with advanced kidney disease

November 11 2021



Rajiv Agarwal, MD, professor of medicine at Indiana University School of Medicine. Credit: IU School of Medicine

An all Indiana University School of Medicine team of researchers led

by, Rajiv Agarwal, MD, professor of medicine and staff physician at the Roudebush VA, and including Arjun Sinha, MD, associate professor of clinical medicine and renal section chief at the Roudebush VA, and Wanzhu Tu, Ph.D., professor of biostatistics and health data sciences and research scientist at Regenstrief Institute, found that chlorthalidone was effective in lowering blood pressure in individuals with advanced kidney disease.

The double-blind, placebo-controlled and randomized study, funded by the National Institutes of Health's National Heart, Lung, and Blood Institute, titled Chlorthalidone in Chronic Kidney Disease (CLICK) was presented as part of a news conference and High Impact Clinical Trials session at the recent international meeting of the American Society of Nephrology and simultaneously published in the prestigious *New England Journal of Medicine*.

"Kidneys are key regulators of [blood pressure](#). When an individual has chronic [kidney](#) disease, the kidneys are unable to control blood pressure," said Agarwal. "If a person suffers from chronic kidney disease and high blood pressure, it is more likely their kidney disease will advance even further and lead to other [health issues](#) such as heart failure."

The CLICK Study randomly assigned patients with stage 4 chronic kidney disease (CKD) to either a placebo or chlorthalidone group, with dosing at 12.5 mg daily. The dose was increased every four weeks, if needed, to a maximum of 50 mg per day for patients in the chlorthalidone group. The study was designed to see if blood pressure decreased in the patients treated with chlorthalidone from baseline to twelve weeks, when monitored using a state-of-the-art device called a 24-hour ambulatory blood pressure monitor.

Chlorthalidone was approved by the FDA in 1960 for treatment of high

blood pressure or hypertension. However, it was largely believed to be ineffective in treating [high blood pressure](#) in people with advanced chronic kidney disease.

Results from the CLICK study showed chlorthalidone lowered [blood](#) pressure by a significant 11 mm Hg at 12 weeks as compared to 0.5 mm Hg reduction with placebo. There was a 50% reduction in albuminuria, a protein that appears in the urine of those suffering from [kidney disease](#), which Agarwal says is remarkable and suggests that chlorthalidone has the potential to reduce kidney failure progression and hospitalizations for [heart failure](#) in these patients.

"These results show chlorthalidone is a low-cost solution for the treatment of hypertension in people with [chronic kidney disease](#), " said Agarwal." These are people who are already taking a variety of medicines, so to have one that is cheap and effective is incredibly meaningful. However, the drug is potent, so the lowest therapeutic dose and careful monitoring is needed to avoid complications."

Agarwal's presentation from the American Society of Nephrology meeting is also available on YouTube:

More information: Rajiv Agarwal et al, Chlorthalidone for Hypertension in Advanced Chronic Kidney Disease, *New England Journal of Medicine* (2021). [DOI: 10.1056/NEJMoa2110730](https://doi.org/10.1056/NEJMoa2110730)

Provided by Indiana University School of Medicine

Citation: Study shows effectiveness of low-cost medicine in treating high blood pressure in people with advanced kidney disease (2021, November 11) retrieved 5 May 2024 from

<https://medicalxpress.com/news/2021-11-effectiveness-low-cost-medicine-high-blood.html>

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