

Research identifies best treatment for blood pressure in diabetic kidney disease

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A medical student checking blood pressure using a sphygmomanometer and stethoscope. Image: Wikipedia.

Blood pressure lowering drugs do not improve life expectancy among adults with diabetes and kidney disease, a new study of the global evidence published today in *The Lancet* reveals.

However, the study, which brings together 157 studies involving more than 43,000 adults with diabetes, shows that angiotensin-converting-enzyme (ACE) inhibitors and angiotensin-receptor blocker (ARB) treatments, alone or in combination, are the most effective drug regimen for preventing end-stage kidney disease—an important finding given that diabetes is now the leading cause of people starting dialysis.

This finding is important because until now it has not been known

whether any available treatment can protect kidney function in the long term, and combination therapy of an ACEi and an ARB has been thought to cause harm.

While treatments in the new study have been shown to help patients, it also shows that any benefits of treatment need to be balanced against potential side-effects. In fact, the study provides a unique opportunity for busy clinicians, who simply cannot read all the literature, to review existing evidence which has been analysed using the highly innovative technology of network meta-analysis. This measures specifically both the benefits and harms of all available treatments and provides a ranking of the most effective interventions.

"In absolute terms, our findings suggest that giving 1000 adults with [diabetes](#) and kidney disease a combination of an ACE inhibitor and an ARB for 1 year might prevent 14 patients developing end-stage kidney disease and induce regression of albuminuria in 208, at the cost of 55 patients having [acute kidney injury](#) and 135 developing hyperkalemia," says contributing author, Professor Jonathan Craig, a renal physician and professor of clinical epidemiology at the University of Sydney.

In the clinic, this means a careful conversation between doctors and patients, which can be informed by this study.

Senior author, Professor Giovanni Strippoli of the University of Bari, an Adjunct Associate Professor of Epidemiology at the University of Sydney and Chairman of the Diaverum Academy, added: "Although our analysis suggests a somewhat greater efficacy of combination regimens for [kidney function](#) outcomes, treatment decisions are ultimately made after consideration of efficacy and safety.

"The study brings together overwhelming numbers of research studies into one place so they can help doctors and patients make confident

[treatment decisions](#)," says author Associate Professor Suetonia Palmer, a practicing kidney specialist at the University of Otago Christchurch in New Zealand.

"This has been a global team working to convert all the available studies around the world into a single study that can be used by consumers, doctors, and policy makers," she added.

"The findings of our analysis show that differing efficacy of ACEi and ARB alone or in combination has not been proven for mortality and end-stage [kidney disease](#) or adverse treatment effects and this is a major challenge for future research," concludes Strippoli.

Provided by University of Sydney

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