

Reduction in protein in the urine is a treatment goal in children with kidney disease

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In a study of children with chronic kidney disease (CKD), blood pressure medications reduced protein excretion in the urine, which was linked with a lower risk of disease progression. The findings, which appear in an upcoming issue of the *Journal of the American Society of Nephrology (JASN)*, provide valuable information for monitoring and treating pediatric patients with CKD.

The excretion of protein in the urine, or proteinuria, indicates an increased risk for kidney and heart problems, and it is known in adult patients that this risk can be lowered with medications called angiotensin-converting enzyme (ACE) inhibitors or angiotensin receptor blockers. Both types of drugs cause blood vessel relaxation and a decrease in blood [pressure](#). It has not been clear, however, whether these medications benefit children with proteinuria.

To investigate, Sophie van den Belt, MD, Ph.D. (University Medical Center Groningen, in The Netherlands) and her colleagues analyzed data from the Effect of Strict Blood Pressure Control and ACE inhibition on the Progression of CRF in Pediatric Patients (ESCAPE) trial. This trial investigated whether intensified blood pressure control can delay the progression of [chronic kidney disease](#) (CKD) in children with the condition.

In total, 280 children with CKD stage 2-4 received a fixed dose of the

ACE inhibitor ramipril and were subsequently randomized to conventional or intensified blood pressure control with antihypertensive medications. The average initial proteinuria lowering was 40.2% in the conventional [blood](#) pressure control group and 46.7% in the intensified [blood pressure control](#) group. Due to the similar initial proteinuria change in the 2 study arms, the groups were combined for further analysis. The investigators found that ramipril therapy lowered proteinuria by an average of 43.5%. Also, a higher degree of proteinuria lowering during the first months of treatment was linked with a lower risk of CKD progression.

"The results indicate that a higher initial proteinuria reduction with ACE inhibition is independently associated with long-term preservation of renal function in [children](#) with CKD. This finding suggests that [proteinuria](#) lowering is an important target in the management of pediatric CKD," said Dr. van den Belt.

More information: "Early proteinuria lowering by ACE inhibition predicts renal survival in children with chronic kidney disease," *Journal of the American Society of Nephrology* (2018). [DOI: 10.2215/ASN.2018010036](#)

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