

# ACE Inhibitors Serve Dual Purpose

The agents reduce kidney disease risk while also lowering blood pressure.

REVIEWED BY PIERO RUGGENENTI, MD

In diabetic patients with hypertension, angiotensin-converting enzyme (ACE) inhibitors reduce the risk of developing diabetes-related kidney disease, independent of their blood pressure-lowering effects, according to a report from the *Journal of the American Society of Nephrology*.

“Our results clearly show that an ACE inhibitor should always be used in patients with high blood pressure and diabetes, even when they have no evidence of renal or cardiovascular disease,” said the study’s lead author, Piero Ruggenenti, MD, of Mario Negri Institute for Pharmacological Research in Bergamo, Italy.

The Bergamo Nephrologic Diabetes Complications Trial (BENEDICT) study included 1,204 patients with type 2 diabetes and hypertension. At the beginning of the study, none of the patients had any signs of kidney disease. They were randomized to treatment with an ACE inhibitor, a calcium antagonist, a combination of an ACE inhibitor with a calcium antagonist or placebo. Rates of microalbuminuria were compared between groups.

## GOOD CONTROL, LOWER MICROALBUMINURIA

After an average of 3 years, patients who had good blood pressure control — regardless of which treatment they received — had lower rates of microalbuminuria. Patients taking the combination treatment had the greatest reduction in blood pressure and were less likely to require additional drugs to keep their blood pressure under control.

Taking an ACE inhibitor, alone or as part of the combination treatment, provided further protection against diabetic kidney disease. This was also the case for patients whose blood pressure remained high — as long as they were taking an ACE inhibitor, their microalbuminuria risk was similar to that of patients whose blood pressure was well-controlled.

Dr. Ruggenenti said, “Treatment with an ACE inhibitor was particularly important when the blood pressure was

poorly controlled — as may happen in most diabetic patients with hypertension, despite the use of two, three or even more drugs.”

## PRIMARY CARE PHYSICIANS NEED TO BE EDUCATED

About 30% of people with diabetes will go on to develop kidney failure, while even more may be at risk of premature death from cardiovascular disease. Eighty to ninety percent of patients with type 2 diabetes also have hypertension, a major risk factor for diabetic kidney disease. “Optimizing blood pressure control appears extremely important to reduce or prevent the risk of kidney failure or death for these patients,” said Dr. Ruggenenti.

All doctors who treat diabetes need to know about the protective benefits of ACE inhibitor treatment — especially primary care doctors who care for the vast majority of diabetic patients without kidney disease. “Early and effective treatment of hypertension is of paramount importance in people with diabetes, and ACE inhibitors should be the treatment of choice,” Dr. Ruggenenti concluded.

“In most patients, an ACE inhibitor alone is not enough to achieve good control of arterial blood pressure — <130/80 mm Hg. In these patients, the doctor should also use other antihypertensive drugs, including a diuretic, in most cases, to achieve this target. Although using an ACE inhibitor is important, so is achieving the target blood pressure whenever possible.” For patients who can’t take ACE inhibitors, angiotensin II receptor antagonists may be a valid alternative. ■

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Ruggenenti P, Perna A, Ganeva M. Impact of blood pressure control and angiotensin-converting enzyme inhibitor therapy on new-onset microalbuminuria in type 2 diabetes: A post hoc analysis of the BENEDICT trial. *J Am Soc Nephrol*. 2006;17:3472-3481.