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### **RAS BLOCKERS MAY REDUCE DIABETIC KIDNEY DAMAGE BY IMPROVING KIDNEY BLOOD FLOW**

**Washington, DC (February 11, 2005)** — How do medications that block the renin-angiotensin system (RAS blockers) work to protect against kidney disease in people with diabetes? At least partly by improving the blood supply to the kidneys, suggests a study in the April *Journal of the American Society of Nephrology*.

Dr. Danilo Fliser and colleagues of Medical School Hannover, Germany, assessed the effects of the RAS-blocking drug olmesartan on blood flow patterns and kidney function in 19 patients with diabetes. Another 19 patients received an inactive placebo. Both groups were treated for 12 weeks.

Olmesartan significantly reduced blood pressure, as expected. At the same time, it also increased the rate of blood flow through the kidneys. The improvement in blood supply was accompanied by a reduction in renovascular resistance, which measures resistance to blood flow in the kidney blood vessels.

In contrast, placebo-treated patients had the opposite pattern: blood flow through the kidneys decreased while renovascular resistance increased slightly. Neither treatment altered the patients' glomerular filtration rate, a standard measure of how efficiently the kidneys are functioning.

Patients receiving olmesartan also had reduced signs of oxidative stress—buildup of unstable, potentially harmful molecules that have previously been linked to cardiovascular disease. This supports recent studies indicating that oxidative stress may contribute to diabetic kidney damage.

Kidney disease (nephropathy) is one of the main complications of type 2 diabetes. In recent years, studies have found that RAS-blocking drugs such as olmesartan can slow the rate of diabetic nephropathy. The new study is one of the first to look at how RAS blockers affect blood flow patterns within the kidneys.

The results show that olmesartan improves the blood supply to the kidneys while reducing resistance to blood flow, at the same time that it reduces the patient's blood pressure. They add to recent studies suggesting that activation of the RAS inside the kidneys is a critical early step in the development of diabetic kidney disease.

The blood flow changes shown—perhaps together with reduced oxidative stress—may help to explain the ability of RAS blockers to prevent or at least slow diabetic kidney disease. A study is underway to see if treating diabetic patients with olmesartan can reduce the long-term risk of kidney disease and other diabetes complications.

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The study's results appear in the article entitled, "Chronic Angiotensin II Receptor Blockade Reduces (intra)Renal Vascular Resistance in Patients with Type 2 Diabetes Mellitus" under the category of Clinical Science: Chronic Kidney Disease in the April issue of JASN and on the ASN website at [www.asn-online.org](http://www.asn-online.org).

The ASN is a not-for-profit organization of 9,000 physicians and scientists dedicated to the study of nephrology and committed to providing a forum for the promulgation of information regarding the latest research and clinical findings on kidney diseases.

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