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## **New Study: Short-term Blood Sugar Control Protects the Kidney but not the Heart in Diabetes Patients**



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An international study has shown that short-term blood sugar control in patients with diabetes has a limited effect on their risk of cardiovascular problems, such as heart disease and stroke.

Conventional belief has been that high blood sugar is a major factor in cardiovascular disease. However, this latest research adds to a growing body of evidence that risk of cardiovascular disease in patients with diabetes cannot be managed meaningfully by controlling blood sugar alone.

The study, led by researchers at Harvard Medical School, USA, and Hadassah Medical Centre, Israel, supported by other global institutions, including St George's, University of London, examined the effect of the drug saxagliptin, a new class of medicine used to reduce blood sugar levels, in patients with Type 2 diabetes.

There are 280 million people worldwide suffering with Type 2 diabetes, a disease defined by high levels of blood sugar. Diabetes doubles the risk of heart attack and stroke and can reduce life expectancy by up to six years. Recognised long-term effects of the condition include blindness, kidney failure, stroke and heart attack.

More than 16,000 patients were studied for over two years to test saxagliptin's cardiovascular safety and also measure whether it could reduce the risk of cardiovascular and kidney damage.

Researchers found that the drug was as safe as existing glucose-controlling medicines. By lowering blood sugar it also successfully reduced the damage diabetes causes to kidney function.

Importantly, however, despite control of blood sugar levels researchers found no significant reduction in the risk of major cardiovascular events such as heart attack or stroke.

Professor Kausik Ray, the study's UK national lead from St George's, University of London, said: "Through this trial we studied the effects of a glucose reducing drug on patients over a two-year period and observed that there was no significant benefit from lowering blood sugar levels with respect to the large blood vessels, which

contribute to heart attacks and strokes. We did, though, observe a benefit on smaller vessels that contribute to kidney disease. This trial tells us that cardiovascular risk among diabetes patients must be managed through other mechanisms.

“Controlling blood sugar in the short term certainly doesn’t present a very meaningful benefit to a patient at risk of cardiovascular problems, although there could be gains over a much longer period. The most effective way to manage cardiovascular disease is through established interventions such as reducing blood pressure, managing cholesterol and encouraging healthier lifestyles.

“It is clear to us now that, in patients with diabetes, there are effective therapies that will reduce their risk of kidney failure and there are separate therapies that will help reduce their risk of cardiovascular problems. More research is needed if we are to find new ways to manage cardiovascular risk in future.”

The study, published by the New England Journal of Medicine on Monday 2 September 2013, is the largest diabetes trial ever carried out, conducted at 788 sites across 26 countries. It is also the first since the Federal Drug Administration in the US and European Medicines Agency revised regulations to give more robust assurance of cardiovascular safety in glucose reducing therapies, following concern that these may cause negative side effects on patient health.

Professor Ray added: “This study also provides reassurance about the safety of a new class of drug in a large number of patients, disproving data from smaller studies about potential safety concerns.”

The full study can be read on the [New England Journal of Medicine website](#).

Source: [St George's, University of London](#)

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