Medical Xpress

# Treating diabetes

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(PhysOrg.com) -- Uncontrolled high blood glucose levels in patients with diabetes (hyperglycaemia) is known to increase mortality, but new research led by the University shows that intensive treatment to control blood glucose can lower it too far (hypoglycaemia), which also increases mortality. Thus, blood glucose level targets should have lower as well as upper limits to lower risk to patients.

The findings are reported in an article published in *The Lancet*, written by Dr Craig Currie of the School of Medicine and colleagues.

The study also found that patients with type 2 diabetes given insulin-based treatments had a 50% increased mortality risk compared to those given combination oral therapy.

The specific goal for control of blood sugar is to return glycated haemoglobin - the glucose level in blood over a prolonged period of time

- to a normal range. Good blood sugar (glycaemic) control is known to reduce risk of long-term small blood vessel complications in both type 1 and type 2 diabetes.

Explaining the need for the research, Dr Currie said: “Reports of potentially raised mortality rates associated with intensive blood sugar control have triggered discussion about recommendations for treatment of type 2 diabetes, specifically relating to the optimum target for glycated haemoglobin. Researchers have suggested that hypoglycaemia contributes to a heightened risk of mortality in patients with diabetes. Because intensive blood sugar control increases risk of hypoglycaemia with some drugs more than with others, assessment of risks associated with the different blood glucose-lowering regimens is important.”

The research assessed the association between all-cause mortality and glycated haemoglobin in patients with type 2 diabetes in a primary care setting and aimed to establish whether any evident association was independent of the diabetes treatment regimen.

Two cohorts of patients aged 50 years and older with type 2 diabetes were generated from the UK General Practice Research Database from November 1986 to November 2008. The researchers identified 27,965 patients whose treatment had been intensified from oral monotherapy to combination therapy with oral blood-glucose lowering agents (metformin plus sulphonylurea), and 20,005 who had changed to treatments that included insulin.

Those with diabetes secondary to other causes were excluded. All-cause mortality was the primary outcome. Age, sex, smoking status, cholesterol, cardiovascular risk, and general morbidity were identified as important confounding factors, and the data were subsequently adjusted for these factors.

Commenting on the findings Dr Currie said: “While the data suggest that insulin could increase the risk of death in type 2 diabetes, differences in the baseline characteristics of the insulin treated patients, such as being older, other medical conditions, longer duration of diabetes, could be behind part of all of this increased risk.

“Whether intensification of glucose control with insulin therapy alone further heightens risk of death in patients with diabetes needs further investigation and assessment of the overall risk balance.

“Low and high mean glycated haemoglobin values were associated with increased all-cause mortality and cardiac events. If confirmed, diabetes guidelines might need revision to include a minimum value.”

Provided by Cardiff University

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