Type 2 diabetes: 'Intensive' versus 'conventional' blood glucose control -- no clear picture

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Research published in The Cochrane Library found that the risk of death and cardiovascular disease, such as stroke, was unchanged whether glucose control was intense or conventional. They did find, however, that when aiming to keep blood glucose levels at the lower intensive level, the chance of damaging small blood vessels in the body, potentially leading to damage in the eyes and kidneys, is reduced. But aiming for this lower level with the more intensive glucose control substantially increased the risk that a person's blood glucose could drop too low, potentially resulting in loss of consciousness or even death if untreated.

Bianca Hemmingsen and colleagues from the Copenhagen Trial Unit in Denmark reached these conclusions after studying all published clinical trials comparing intensive glycaemic control with conventional glycaemic control. They identified 20 trials on patients with type 2 diabetes that together involved a total of 29,986 participants.

Keeping blood glucose levels under control is the goal of all treatments for people with type 2 diabetes. There is an active debate between experts about the level of blood glucose that patients should aim for. Some argue that they should aim to keep blood glucose about or slightly above normal, and thereby avoid the risks of too low blood glucose, what doctors call hypoglycaemia. Others think patients should use a more intensive control that keeps blood glucose at the lower levels seen in non-diabetic people so that they avoid the risks associated with having too

much blood glucose - hyperglycaemia.

The researchers did not find enough information to properly compare quality of life between people who aimed for the two different targets. However, Hemmingsen and colleagues hypothesized that intensive glycaemic control may negatively affect a person's quality of life when compared with aiming for conventional levels. "Targeting the intensive levels means that many patients have to cope with complex and time consuming treatment. On top of this, they have the fear that their blood glucose might drop too low," says Hemmingsen.

In most people, cells in their pancreas monitor blood glucose and release precise amounts of the glucose-regulating hormone insulin so that the glucose level is maintained. In people with type 2 diabetes, this insulin regulating system fails. These people have to manage their own glucose levels through a mixture of exercise, weight control, diet and the use of a range of different medications.

"With the numbers of people in the world with type 2 diabetes increasing, it is important that we work out the best way of helping them to manage their blood glucose levels," says Hemmingsen. She believes that there is still a clear need for large clinical trials investigating patient-relevant outcomes that randomly assign patients to clearly defined different glycaemic targets.

More information: Hemmingsen B, Lund SS, Gluud C, Vaag A, Almdal T, Hemmingsen C, Wetterslev J. Targeting intensive glycaemic control versus targeting conventional glycaemic control for type 2 diabetes mellitus. *Cochrane Database of Systematic Reviews* 2011, Issue 6. Art. No.: CD008143. DOI: 10.1002/14651858.CD008143.pub2