



Keeping a close eye on diabetes complications

Survey highlights link between molecular markers and potential complications of type II diabetes.

Monitoring additional molecular markers may help avoid complications in people with diabetes, according to research from Saudi Arabia.

The kingdom has one of the world's highest rates of diabetes, with nearly 3.5 million people living with the disease and more than 20,000 deaths caused by it in 2015 alone.

Current guidelines in Saudi Arabia recommend treating inadequately controlled diabetes with insulin, alone or together with oral glucose-lowering drugs. Research shows an increasing dependence by physicians on insulin therapy to decrease

vascular complications in these patients.

Despite its benefits, insulin therapy is associated with weight gain and more frequent episodes of low blood glucose levels. Weight gain due to insulin therapy can directly and indirectly lead to cardiovascular complications.

An increased risk of cardiovascular disease is also associated with increased blood levels of C-reactive protein (CRP), considered a non-specific marker of disease. Also, increased levels of γ glutamyl transferase (GGT) are associated with an increased risk of diabetes, hypertension and cardiovascular complications.

A team of researchers across the kingdom wanted to know if there was a relationship between the type of treatment used in 153 type II diabetes patients at two hospitals in Saudi Arabia, how well their glucose levels were controlled, their risk factors for heart disease, and their serum CRP and GGT levels.

Diabetes was responsible for more than 20,000 deaths in 2015 alone.

They found generally higher glucose levels in patients receiving insulin therapy alone compared to those also taking oral glucose-reducing drugs. The researchers caution, however, that this finding could be caused by lack of patient compliance with their insulin treatment program.

They also found that the type of treatment received did not affect CRP and GGT levels. High GGT levels were associated, however, with poor control of blood glucose levels, irregular levels of blood lipids, hypertension and obesity in the abdominal region. High CRP levels were also associated with an increased waist circumference.

The researchers recommend routinely measuring CRP and GGT in diabetes patients to assess factors that might increase the risk of complications such as cardiovascular disease.

Others, however, say the recommendation is premature. "The data show associations in a very small population of patients, and there's no evidence of a causal connection. The findings would need to be replicated in multiple other cohorts before these signals could be recommended for routine monitoring," says Rhonda Cooper-DeHoff, a professor of pharmacotherapy and cardiovascular medicine at the University of Florida, who was not involved in the study.

Bahijri, S. M., Ahmed, M., Al-Shali, K., Bokhari, S., Alhozali, A. *et al.* The relationship of management modality in Saudi patients with type 2 diabetes to components of metabolic syndrome, γ glutamyl transferase and highly sensitive C-reactive protein. *Therapeutic Advances in Chronic Disease* 7, 246-254 (2016).