



FOCUS ON RESEARCH

PATTERNS OF WEIGHT CHANGES AFTER DIAGNOSIS IN PATIENTS WITH TYPE 2 DIABETES AND THEIR RELATIONSHIP WITH METABOLIC AND CARDIOVASCULAR OUTCOMES

Researchers

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Aim

- We examined the patterns of weight change in people with type 2 diabetes in Scotland within the first 5 years after diagnosis.
- We also explored the relationships between these weight change patterns and the patient's blood glucose control, cardiovascular outcomes and mortality over the five year period.

Project Outline/Methodology

This study was based on retrospective data collected from the Scottish diabetes care database and hospital admission records. 29,316 suitable patients with adequate follow up data were included in the final analysis.

- We analysed the extent and variation of weight change and examined their relationship with blood sugar (glycaemic) control (measured by glycosylated haemoglobin HbA_{1c})
- We also assessed the impact of weight changes and variation on mortality and cardiovascular disease.

The analyses considered 1, 2, 3 and 5 years' follow up

Key Results

Of the 14305 patients with five year follow up data, 5800 patients (41%) had lost 2.5% or more of their initial weight at diagnosis. Women were more likely to lose weight than men. Other patient characteristics associated with weight loss included being older and a high body mass index at diagnosis. Patients with poorer glycaemic control (HbA_{1c} >7% or >53mmol/mol) at 5 years were likely to have gained more or lost less weight than those in control, irrespective of their current treatment.

Being male, increased age, deprivation and a higher body mass index at diagnosis were associated with an increased risk of death and cardiovascular disease. Although weight loss improved HbA_{1c}, weight change was not associated with mortality or cardiovascular events, once the patient characteristics were adjusted for. However, marked

fluctuations in weight appeared detrimental to mortality and these cardiovascular events.

Conclusions

Our results highlight that significant weight loss is achievable in people with type 2 diabetes. Planned weight loss is associated with better glucose control and may need less medication. Younger people and male patients are less successful at losing weight. In a few patients weight loss may be a sign of poor glucose control and indicates the need for intensifying treatment. Marked weight fluctuations seem detrimental but weight loss in the first 2 years does not predict mortality or cardiovascular events in the first five years.

What does this study add to the field?

Our results confirm that significant intentional weight loss, achievable in routine clinical practice in some patients, improves diabetes control and decreases the need for medication. Marked weight variability is associated with increased morbidity and mortality, suggesting for the first time the potential harmful impact of cycling of weight in this population.

Implications for Practice or Policy

- The continuing need to improve care for higher risk groups with type 2 diabetes, e.g. men, older age groups, more deprived groups, people with higher BMI.
- Improve weight loss services at diagnosis for people with type 2 diabetes, particularly for those people with a BMI>40 who are presently not eligible for bariatric surgery.

Where to next?

We plan to look at the influence of weight change variability in greater detail. We also plan to study the impact of other known risk factors like lipids, blood pressure and prior disease along with weight changes on macrovascular and microvascular outcomes. We need to extend our investigations to other diabetes related complications, e.g. eye disease.

Further details from

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