Keeping abreast of the latest diabetes research: Type 2 diabetes prevention, using CGM data in clinic and costs of DKA

Too busy to keep up to date with the latest research? In this series, we select the latest papers of interest to diabetes nurses. Click on the journal citations to access the full articles.

Cost-effectiveness of the DiRECT intervention and diabetes remission

Xin Y et al (2019)
Diabet Med **36**: 1003–12

The DiRECT study achieved a type 2 diabetes remission rate of 46% at 1 year in participants who underwent the intervention, including a low-calorie liquid diet and support with food reintroduction and weight maintenance. In the current study, the authors modelled the intervention's cost-effectiveness at 1 year compared with usual NHS care.

Taking into account programme set-up (including healthcare professional training) and running costs (appointments, the formula diet sachets and training), oral antidiabetes and antihypertensive medications, and healthcare contacts, the intervention was calculated to cost £982 more per participant. Factoring in the remission rate of 46%, the cost per 1 year of diabetes remission was £2359.

This estimate falls well within the costs per quality-adjusted life-year ratios of £20 000–£30 000 applied to healthcare interventions in the UK. With longer-term follow-up due to be published, assuming that these remission rates can be at least partially maintained, the authors expect the costs of the intervention to soon be outweighed by the savings from avoiding diabetes and its complications.

Using CGM data in clinics: International consensus

Battelino T et al (2019)
Diabetes Care **42**: 1593–603

This article presents the consensus report of an international expert panel of clinicians, researchers and people with diabetes on data interpretation and target-setting for continuous glucose monitoring (CGM).

The panel identifies "time in range" as a metric of glycaemic control that provides more actionable information for CGM users than HbA$_{1c}$ alone. General blood glucose targets (although these should always be personalised and agreed with the individual) are 3.9–10.0 mmol/L in people with type 1 and type 2 diabetes, and the aim is to achieve these levels in more than 70% of CGM readings. In addition, users should aim to have less than 4% of readings below this range (i.e. in hypoglycaemia). The panel recommends that the first priority of treatment should be to reduce the time below range, before addressing the time in or above range.

Older and high-risk individuals should aim to be in range for >50% of readings, and the treatment priority is to reduce the time below range to <1% of readings. Conversely, during pregnancy, stricter glycaemic targets (3.5–7.8 mmol/L) are recommended, with the goal being to safely increase time in range as quickly as possible, while reducing time above range and glycaemic variability.

Costs of treating DKA in young people

Dhatariya KK et al (2019)
Diabet Med **36**: 982–7

This study used data from a nationwide survey to estimate the costs of managing diabetic ketoacidosis (DKA) in adolescents with diabetes in the UK.

Including nursing and medical time, diagnostic and laboratory assessments, intravenous insulin and ward per diems, the mean cost per episode of DKA was estimated to be £1387. The mean total length of stay was 2.4 days.

What is interesting about this study is the finding that hopsitals which followed British Society of Paediatric Endocrinology and Diabetes (BSPED) guidelines on managing DKA had significant cost savings of £762 compared with hospitals that did not. The BSPED guidelines can be found here.

Encouraging lifestyle change to reduce diabetes risk after GDM

Dennison RA et al (2019)
Diabet Med **36**: 702–17

Women who develop gestational diabetes (GDM) are at increased risk of developing type 2 diabetes in the future. Improving diet and increasing physical activity can halve this risk; however, most women do not attempt behaviour change after developing GDM. This systematic review focusing on the views of women with previous GDM explored why this is the case.

The principal barrier to adopting lifestyle change was that this group prioritised their family over themselves, and needed resources, time, energy, information and support.

Based on their findings, the authors make 20 recommendations on how to encourage lifestyle change. These are categorised by level of evidence, and include encouraging friends and family members to support them practically; recommending flexible exercises such as those that can be done at home (rather than attending gyms or classes) and walking; providing information on low-cost or money-saving behaviours and resources; and providing guidance on buying and preparing healthy, tasty food efficiently. ∎