Keeping abreast of the latest diabetes research: HbA_{1c}, nurse-led care and cardiovascular risk

Too busy to keep up to date with the latest research? In this new series, Julie Brake, a Diabetes Specialist Nurse in Liverpool, selects the latest papers of interest to diabetes nurses.

Long-term HbA_{1c} in T1D

Nordwall M et al (2015)
Diabetes Care **38**: 308–15

It is difficult to optimise HbA_{1c} in people with T1D due to the increasing risk of hypoglycaemia as control improves. This study evaluated the long-term effects of HbA_{1c} in people with T1D on the development of retinopathy and nephropathy. The study followed 451 people diagnosed with T1D between 1983 and 1987 for 20–24 years. The long-term HbA_{1c} was calculated from 2–4 readings taken each year.

They found that the incidence of retinopathy and nephropathy increased considerably as the mean HbA_{1c} increased. While they found some clinically insignificant retinopathy and nephropathy at nearly every mean HbA_{1c} level, they found that only one participant developed significant retinopathy (proliferative) in the group with a mean HbA_{1c} of <61 mmol/mol (<7.7%). However, half of those with a mean HbA_{1c} of >80 mmol/mol (>9.5%) developed proliferative retinopathy.

They found microalbuminuria across all mean HbA_{1c} levels in 15% of the total cohort, but macroalbuminuria only occurred in those with a HbA_{1c} of ≥69 mmol/mol (≥8.5%). The authors concluded that aiming for a long-term target HbA_{1c} ≤60 mmol/mol (≤7.6%) can prevent retinopathy and nephropathy for up to 20 years in people with T1D.

Nurse-led inpatient treatment

Manders G et al (2015) *Diabet Med.* Epub ahead of print

This study from the Netherlands looked at the feasibility, safety and efficacy of a Nurse-Driven Diabetes In-Hospital Treatment (N-DIABIT) protocol. The protocol consisted of nurse-driven correctional therapy for inpatients with diabetes, in addition to the physician-guided basal therapy. The protocol was carried out by the trained ward nurses.

N-DIABIT was introduced and data collected from 210 people with diabetes admitted after the introduction of the protocol (intervention group). This was then compared to a control group (n=200). In addition to this, the researchers also looked at those people where protocol adherence ≥70%.

The results showed no difference between the intervention and control group in mean blood glucose levels, consecutive hyperglycaemic episodes, length of stay, number of blood glucose measurements and incidence of hypoglycaemia. However, when looking at those people with adherence of 70% or over, they found significant reductions in blood glucose levels, and hyper- and hypoglycaemia in the intervention group.

The authors concluded the protocol was feasible, safe and non-inferior to physician-driven care alone and, in fact, when the protocol was adhered to, there was improved glycaemic control.

Hypoglycaemia, cardiovascular disease and mortality

Khunti K et al *Diabetes Care* **38**: 316–22

This study looked at the link between hypoglycaemia, cardiovascular (CV) events and all-cause mortality using data from the UK research datalink database. Participants were all on insulin therapy and aged ≥30 years. There were 3260 with T1D and 10 422 with T2D. All hypoglycaemia events were reported, including episodes from general practice to hospital admission due to severe hypoglycaemia. Analysis showed that in people with T1D who experienced hypoglycaemia there was a significant increase in CV events if there had been no previous history of CV disease. Increased risk was not seen in those who had a previous history of CV disease. In people with T2D, CV risk was significantly increased whether or not they had any previous history of CV disease. In addition, the researchers found there was a significant increase in all-cause mortality associated with hypoglycaemia in people with T1D and T2D, with or without a previous history of CV disease.

The researchers concluded that every effort should be made to reduce the risk of hypoglycaemia in insulin-treated people, especially those with high CV risk.

Type 1 diabetes on Twitter

Gabarron et al (2015) *Stud Health Technol Inform* **216**: 972

This study looked at who is re-tweeting on Twitter and what re-tweeters feel is important to share. Knowing what is being said about T1D on Twitter can help healthcare professionals and carers understand what kind of information is relevant to those with T1D. The profiles of Twitter users were collected and classified and the number of re-tweets was registered.

More than half of the tweets were posted by individuals with T1D and their tweets were also the most re-tweeted. The next active users were non-government organisations and healthcare professionals.

The authors suggest that professionals should look at content to identify what information is valuable to patients and makes them re-tweet or share that information. ■