Meeting report: ADA 81st Scientific Sessions

Stay abreast of the latest news in diabetes nursing. In this issue, we summarise the highlights from the American Diabetes Association (ADA) 81st Scientific Sessions, held online from 25th to 29th June 2021.

ADA/EASD draft guidance on type 1 diabetes management

Several members of the international writing group that drafted the first ever ADA/EASD Consensus Report on the management of adults with type 1 diabetes came together to highlight key topics addressed in the report and to solicit input on the draft guidance. The report was influenced by the ADA/EASD consensus on type 2 diabetes management, and the authors acknowledged that there was a need to develop a comparable guideline that specifically addresses the needs of people with type 1 diabetes.

The unifying concept of the report is personalised care, meeting the needs of the person with type 1 diabetes, including replacing insulin as physiologically and safely as possible, and taking into account the individual's preferences, comorbidities, capabilities, health status, and social and other circumstances.

To achieve individualised care, a needs assessment should precede diabetes self-management education and support from the healthcare team, and four critical times for ongoing education are identified: at diagnosis; annually and/or when the person is not meeting treatment targets; when complicating factors develop; and when transitions in life and healthcare occur.

The report also addresses behaviour considerations such as alcohol and tobacco use, sleep, sick day management, driving, employment, physical activity and nutrition. As with treatment, nutrition advice also needs to be individualised; no single eating pattern is recommended.

Continuous glucose monitoring (CGM) is advised as the standard of care for glucose monitoring in adults with type 1 diabetes, although the choice of device should be determined by the individual's preferences and needs. Multiple daily injections or continuous subcutaneous infusion are recommended as the insulin regimens of choice. Structured education, CGM and automated insulin delivery are all crucial to lowering HbA_{1c} without increasing the occurrence of hypoglycaemia.

With 20% to 40% of people with type 1 diabetes experiencing high levels of emotional distress related to the condition, the consensus report supports periodic patient screening for self-management difficulties and psychological and social problems.

The report also covers diabetic ketoacidosis, inpatient care, adjunct therapies, pregnancy, pancreas and islet cell transplantation, and treatment individualisation in older age. It is full of support materials, including tables of glycaemic targets, schedules of care, non-glycaemic factors that can alter HbA_{1c} levels, standardised CGM metrics for clinical care, examples of subcutaneous insulin regimens, and the various properties of approved and non-approved adjunct therapies, including metformin, pramlintide, GLP-1 RAs and SGLT2 inhibitors. A new diagnostic algorithm is also included that begins with measuring islet autoantibodies.

The draft document was coauthored by 14 content experts in type 1 diabetes, with equal numbers from the US and Europe. Feedback has now been closed, but the draft can be viewed here.

GRADE study: Head-to-head comparison of diabetes drugs

Preliminary findings were presented from the GRADE (Glycaemia Reduction Approaches in Diabetes: a comparative Effectiveness) study, designed to compare the effectiveness of different classes of glucose-lowering therapies: the sulfonylurea glimepiride, the DPP-4 inhibitor sitagliptin, the GLP-1 RA liraglutide and insulin glargine. Unfortunately, the SGLT2 inhibitor class was new at the start of the study and so was not included, and neither was the TZD pioglitazone owing to safety concerns.

A total of 5047 US adults with type 2 diabetes of less than 10 years' duration were randomised to one of the study drugs as second-line therapy to metformin (which was uptitrated to a target of 2000 mg, minimum 1000 mg, per day). The primary metabolic outcome was time to HbA_{1c} ≥53 mmol/mol (7.0%).

Over an average of 5 years' follow-up, liraglutide and insulin glargine had the greatest glucose-lowering effects, both keeping HbA_{1c} under 53 mmol/mol for a mean of 2.4 years, compared with 2.2 years for glimepiride and 1.9 years for sitagliptin. Both drugs were associated with a significantly reduced risk of the primary outcome compared with sitagliptin and glimepiride, while sitagliptin was associated with a significantly higher risk than all the other agents.

Adjudication of cardiovascular events was not finished at the time of the presentation; however, early indications suggest a protective effect with liraglutide. Hypoglycaemia

was more common with the sulfonylurea, and gastrointestinal side effects were more common with the GLP-1 RA.

Although long-awaited, these results present little to aid clinicians with individualising treatment; however, it could be argued that the lack of any surprising outcomes adds further weight to the evidence supporting use of the ADA/EASD consensus on type 2 diabetes management. The results also offer a vindication for basal insulin as second-line therapy.

Efpeglenatide: Cardiovascular and renal outcomes with new GLP-1 RA

Efpeglenatide is an investigational once-weekly, exendin-based, injectable GLP-1 RA. Findings from the phase 3 cardiovascular outcomes trial of the agent were presented at the Sessions and published simultaneously in the *New England Journal of Medicine*.

A total of 4076 participants with type 2 diabetes and HbA_{1c} >53 mmol/mol (7.0%) who had either cardiovascular disease or chronic kidney disease plus one or more cardiovascular risk factor were randomised to efpeglenatide or placebo in addition to the standard of care.

Over a median follow-up of 1.81 years, the risk of 3-point major adverse cardiovascular events (non-fatal myocardial infarction, non-fatal stroke or death from cardiovascular or undetermined causes) was reduced by 27% in efpeglenatide recipients (3.9 vs 5.3 events per 100 person-years; P=0.007 for superiority). The risk of the composite renal outcome (decrease in kidney function or macroalbuminuria) was reduced by 32%. As with other agents in the class, gastrointestinal side effects were more common with efpeglenatide.

Around 15% of participants were receiving concomitant treatment with an SGLT2 inhibitor, and analysis showed that the beneficial effects of the GLP-1 RA persisted in this subgroup, suggesting both that the protective effects of the two drug classes may be at least partially additive, and that there were unlikely to be any significant interactions between the two classes.

The trial sponsor, Sanofi, is no longer developing efpeglenatide, returning the rights to the original developer, Hanmi Pharmaceuticals. However, it is hoped that the drug will be developed further.

Click here to read the study results in full.

Tirzepatide: New "twincretin" shows promising effects

Data were presented from four clinical trials of tirzepatide, an investigational once-weekly agent that augments the activity of the two incretin hormones, GLP-1 and GIP, together. The phase 3 SURPASS programme compared three doses of tirzepatide (5 mg, 10 mg and 15 mg) variously against placebo, semaglutide and insulin degludec.

In SURPASS-1, all three tirzepatide doses were superior to placebo in reducing HbA_{1c} and body weight, with up to 92% of participants achieving an HbA_{1c} of <53 mmol/mol (7.0%), and up to 52% achieving an HbA_{1c} of <39 mmol/mol (5.7%). In SURPASS-5, all three tirzepatide doses delivered superior HbA_{1c} and weight reductions to placebo when both were added to titrated insulin glargine.

In SURPASS-2, mean changes in HbA_{1c} were both non-inferior and superior to semaglutide 1 mg (the highest licensed dose at the time) in those treated with all three doses of tirzepatide, with a 25 mmol/mol (2.3%) reduction in those treated with tirzepatide 15 mg, compared to a 20 mmol/mol (1.86%) reduction with semaglutide 1 mg. Up to 92% of participants on tirzepatide achieved an HbA_{1c} of <53 mmol/mol and up to 51% achieved <39 mmol/mol. However, the trial's open-label design was a weakness.

In SURPASS-3, all three tirzepatide doses delivered superior HbA_{1c} and body weight reductions from baseline compared with titrated insulin degludec. Up to 93% of participants on tirzepatide achieved an HbA_{1c} of <53 mmol/mol and up to 48% achieved <39 mmol/mol.

A cardiovascular outcomes trial pitting tirzepatide against the GLP-1 RA dulaglutide is ongoing.

Click here to read the SURPASS-2 results in full. ■

Citation: Meeting report: ADA 81st Scientific Sessions. *Journal of Diabetes Nursing* **25**: [early view publication]