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Report from the 71st Scientific Sessions of the American Diabetes Association

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There were no earth-shattering announcements made at the *71st Scientific Sessions of the American Diabetes Association* held in San Diego this year.

New versus old therapy featured heavily on the agenda for clinical therapeutics sessions. In the past 70 years, the mainstay of diabetes treatments have been within three drug classes. There have been nine new classes of drugs that have emerged in the past 15 years. A trial is ongoing to provide more evidence for older therapies – GRADE (Glycemic Reduction Approaches in Diabetes: A Comparative Effectiveness study) will compare meformin with five other diabetes therapies. The mean follow-up period will be 4 years and the study will compare the effectiveness of each drug in reducing HbA_{1c} levels to <7% (<53 mmol/mol). (Further details are available at: http://bit.ly/o7BTeG.)

A new ultra-long-acting insulin called insulin degludec has been shown to have less nocturnal hypoglycaemia compared with insulin glargine in a 16-week randomised trial in people with type 2 diabetes (Zinman et al, 2011). In terms of other long-acting diabetes agents, exenatide will soon be available in a once-weekly injection formulation.

It was announced that a new dipeptidyl peptidase-4 (DPP-4) inhibitor – linagliptin 5 mg – has received a positive response from the European Medicines Agency's (EMA) Medicinal Committee recommending the drug for approval in Europe. The main feature that distinguishes linagliptin from other DPP-4 inhibitors is that it is excreted via the bile duct and gut, so no adjustment is recommended in people with renal or hepatic impairment.

Trial data were presented on the next class of oral antidiabetes drugs which will be launched in the future: sodium glucose co-transporter-2 (SGLT-2) inhibitors. The two drugs that are in the latest stages of development are canagliflozin and dapagliflozin. Certainly the mechanism of action for this class – involving blocking the protein responsible for the reabsorption of glucose in the kidney – is of interest to those in the diabetes field. Treatment with an SGLT-2 inhibitor may result in a weight loss equivalent of up to 200 calories per day (Norton et al, 2010). More data are required on the potential adverse effects of these drugs, specifically regarding urinary tract infections and vulvovaginal candidiasis, before healthcare professionals can prescribe them with confidence. New novel mechanisms of action in drug therapy give both individuals and healthcare professionals hope in improving the health and outcomes of those with diabetes.

The contentious issue of diabetes diagnosis criteria and the prediction of a future diabetes diagnosis was also discussed. TOPICS 3 is a longitudinal cohort study based in Japan involving over 6000 individuals with an HbA_{1c} level between 5.7 and 6.4% (39 and 46 mmol/mol) and impaired fasting glucose to predict the risk of developing diabetes (Heianza et al, 2011). The HbA_{1c} test has many advantages, such as being able to take it at any time versus the inconvenience of being in a fasting state. Both tests were equivalent in terms of predicting diabetes progression. The authors concluded that both tests could efficiently be used together as a predictor of diabetes development. The study was only conducted in the Japanese population so results cannot necessarily be applied to the UK population.

A session entitled *Facts and Fictions on Beta Cell Preservation in Type 2 Diabetes* conveyed that there was a 65% reduction in beta-cells in type 2 diabetes and research is being carried out on the role of beta-cell mass and function.

The symposium *Lifestyle Approaches to Treating Hypertension in Diabetes – Research, Recommendations, and the Real World* highlighted the phenomenon of "salt sensitive" individuals, for example those who are of African Caribbean origin. Importantly, it was made clear that there is no test to identify those who are salt sensitive. Studies have found there is no harm in reducing sodium intake – the benefits of reducing sodium are well established in reducing cardiovascular disease and hypertension. As healthcare professionals we need to favour practices where the benefits of treatments outweigh any risk of harm. ■

Heianza Y, Hara S, Arase Y et al (2011) *Lancet* **378**: 147–55
Zinman B, Fulcher G, Rao PV et al (2011) *Lancet* **377**: 924–31
Norton L, DeFronzo RA, Abdul-Ghani MA (2010) *US Endocrinology* **6**:42–7