Latest news: Type 1 diabetes prevention and screening, EMPA-KIDNEY, hybrid closed-loop systems

Stay abreast of the latest news that could impact diabetes nursing.

FDA approves first drug that can delay onset of type 1 diabetes

The US Food and Drug Administration has approved a first-in-class therapy that can delay the onset of type 1 diabetes. Teplizumab, a monoclonal antibody targeting CD3, acts by deactivating the immune cells that attack insulin-producing cells and increasing the proportion of cells that help moderate the immune response, and has been shown to slow the progression of Stage 2 (pre-symptomatic) to Stage 3 type 1 diabetes (osmotic symptoms and DKA) by 25 months.

Teplizumab is administered by intravenous infusion once daily for 14 consecutive days. Its efficacy and safety were evaluated in a clinical trial with 76 people with Stage 2 type 1 diabetes. Over a median follow-up of 51 months, teplizumab recipients were significantly less likely to develop Stage 3 diabetes than placebo recipients (45% vs 72%). The median time from randomisation to stage 3 diagnosis was significantly lower (50 vs 25 months). The most common side effects included decreased levels of certain white blood cells, rash and headache.

Teplizumab is approved to delay the onset of stage 3 diabetes in adults and children 8 years and older who currently have stage 2 type 1 diabetes.

New UK-first trial to screen 20 000 children for type 1 diabetes

A trial screening programme for type 1 diabetes that could transform the way the condition is identified and managed in its earliest stages has opened for recruitment in the UK. ELSA (EarLy Surveillance for Autoimmune diabetes) is funded by Diabetes UK and JDRF, and will aim to recruit 20 000 children aged 3–13 years to assess their risk of developing type 1 diabetes.

Children found to be at risk and their families will be offered support and education, including information on symptoms and management, to help prepare them for the diagnosis of type 1 diabetes. Families will also be offered the opportunity to be followed up in the long term to enable closer monitoring and potentially to start insulin treatment sooner. Research in Europe and the US has found that the extra support and monitoring screening programmes can offer dramatically reduces the risk of being diagnosed in DKA.

To find out how children can take part in the ELSA study and sign up, visit https://elsadiabetes.nhs.uk

EMPA-KIDNEY trial shows benefits of empagliflozin in CKD

Results from the EMPA-KIDNEY trial, published in the *New England Journal of Medicine*, demonstrate that the SGLT2 inhibitor empagliflozin reduces the risk of renal disease progression or cardiovascular death in a wide range of people with chronic kidney disease (CKD), with eGFR as low as 20 mL/min/1.73 m^2.

A total of 6609 people with CKD and either an eGFR of 20–45 or an eGFR of 45–90 plus an urinary albumin:creatinine ratio (ACR) of ≥26.6 mg/mol were randomised to empagliflozin or placebo. The trial was ended early due to prespecified efficacy endpoints being met. Over a median of 2 years' follow-up, the primary endpoint, a composite of renal disease progression or death from cardiovascular causes, occurred in 13.1% of empagliflozin recipients versus 16.9% of placebo recipients (hazard ratio 0.72; 95% CI 0.64–0.82). The rate of all-cause hospitalisation was lower in the empagliflozin group (hazard ratio, 0.86; 95% CI 0.78–0.95).

There were no significant differences in rates of all-cause mortality or the composite outcome of hospitalisation for heart failure or cardiovascular death; however, this may have been due to the low number of events owing to the early discontinuation of the trial.

Results were consistent irrespective of type 2 diabetes status and across subgroups defined according to eGFR ranges. The rates of serious adverse events were similar in the empagliflozin and placebo groups.

Click here to read the study results in full.

FreeStyle LibreLink app now compatible with Novo's smart insulin pens

Abbott's FreeStyle LibreLink app can now connect with Novo Nordisk's smart connected pens, the NovoPen 6 and NovoPen Echo Plus. This allows people using the intermittently scanned CGM technology to see how different factors like dose timing and the amount of insulin taken impact their individual glucose patterns.

By tapping the smart pens against their smartphone, individuals' insulin dose data is automatically uploaded to the LibreLink

app, where it can be viewed alongside their glucose data in one place. Users can also opt to share their integrated data with their healthcare teams through cloud-based LibreView system.

The six principles of good peer support for people living with type 1 diabetes

NHS England has published guidance for people looking to run or commission a Peer Support Group for people with type 1 diabetes. The aim is to summarise the the values that should underpin a peer support group and, ultimately, set the template for peer support being as much a fundamental part of type 1 diabetes care as education and technology.

According to the document, good peer support should be:

- Driven by the shared experiences of people living with type 1 diabetes.
- Reciprocal, with opportunities for people to "give and get" as well as to learn from one another.
- Safe and encouraging, allowing people to share their experiences free from any judgement.
- Accessible and inclusive, available to everybody with type 1 diabetes.
- Person-centred, taking account of each person's strengths, values, needs and feelings.
- Complementary, working hand in hand with health and social care providers.

The document explains why each of these principles are important and what they mean for people with diabetes, peer support group leaders and facilitators, and healthcare professionals.

The document may be read alongside the *Peer Support Quality and Implementation Guide* and the *Supported Self Management Summary Guide* which provide additional information on implementing peer support.

Click here to view the document.

Hybrid closed-loop systems in children and young people

Hybrid closed-loop (HCL) devices provide automated basal insulin delivery with rates calculated from continuously monitored glucose levels, supplemented by manual (user-calculated) mealtime boluses. Results from the recent NHS England trial of HCL have been published, showing the benefits of the technology in children and young people with type 1 diabetes.

In total, 251 participants with ages ranging from 2 to 19 years were enrolled. After 6 months of treatment, mean HbA_{1c} fell significantly from 62 mmol/mol (7.8%) to 55 mmol/mol (7.2%). Mean time in range increased from 49% to 63%.

The proportion of time spent in hypoglycaemia fell from 3.6% to 2.4% ($P<0.001$), and mean Hypoglycaemia Fear Survey scores decreased by 7.4 points in HCL users and 11.3 points in parents/carers. Sleep scores also improved significantly in both HCL users and parents/carers.

There were no differences in any of the outcome measures between the three different types of HCL system used; however, the study was not designed to test superiority or non-inferiority.

Click here to read the study in full.

SMC approves finerenone for type 2 diabetes-related CKD

The non-steroidal selective mineralocorticoid receptor antagonist finerenone (Kerendia) has been accepted for use within NHS Scotland by the SMC for the treatment of chronic kidney disease (stage 3 and 4 with albuminuria) associated with type 2 diabetes in adults.

The acceptance is based on the results of the FIDELIO-DKD study. In 5734 adult participants, finerenone significantly reduced the risk of the primary composite renal outcome of kidney failure, ≥40% eGFR reduction or renal death by 18%, an absolute risk reduction of 3.3%, over a median follow-up of 2.6 years compared with placebo. There was also a 14% relative risk reduction (absolute risk reduction 1.8% in the composite cardiovascular endpoint. ■

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