**Review of new once-weekly Type 2 diabetes drugs**

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University of Leicester researchers evaluate effects of GLP-1RAs

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Once-weekly glucagon-like peptide-1 receptor agonists (GLP-1RAs) differ in their efficacy and safety profiles, according to new research by the University of Leicester.

Compared to other once-weekly GLP-1RAs which are licensed and available, dulaglutide 1.5mg and once weekly exenatide showed the greatest reduction of HbA1c and fasting plasma glucose.

GLP-1RAs are a relatively new class of drugs that stimulate insulin and inhibit glucagon secretion, slow gastric emptying, and reduce food intake. While the first approved GLP-1RAs are administered as subcutaneous daily injections, more recently GLP-1RAs available via once-weekly administration have emerged, reducing the number of injections and side effects and potentially improving patient compliance.

In clinical studies, these drugs improve glucose control and reduce body weight, without an increased risk for hypoglycaemia. To date, however, no direct comparisons between once-weekly GLP-1RAs are available.

The research – carried out by the university’s Diabetes Research Centre, which is based at the Leicester Diabetes Centre – used an innovative method to evaluate the efficacy and adverse effects of once-weekly GLP-1RAs in adults with Type 2 diabetes.

Researcher Dr Francesco Zaccardi and colleagues conducted a network meta-analysis of randomised trials. In the absence of direct evidence, network meta-analysis is an increasingly used statistical methodology that allows the estimation of the comparative effectiveness of multiple treatments.

Dr Zaccardi concluded: “Compared to other available once-weekly GLP-1RAs, dulaglutide 1.5mg and once weekly exenatide showed a greater reduction of HbA1c and fasting plasma glucose. The risk of hypoglycaemia among once-weekly GLP-1RAs was comparable. Taspoglutide, one of the agents evaluated, has already been withdrawn from the market for high rates of nausea, and this has been confirmed in the meta-analysis.”

The study ‘Benefits and Harms of Once-Weekly Glucagon-like Peptide-1 Receptor Agonist Treatments’ has been published today in the Annals of Internal Medicine which is a very prestigious global journal.

The researchers looked at34 trials involving 21,126 participants. Compared with placebo, all once-weekly GLP-1RAs reduced HbA1c and fasting plasma glucose while taspoglutide 20 mg, once-weekly exenatide, and dulaglutide, 1.5 mg, reduced body weight. Among once-weekly GLP-1RAs, the greatest differences were found between dulaglutide 1.5 mg and taspoglutide 10 mg for HbA1c (– 0.4%; 95% CI: – 0.7% to – 0.2%); once-weekly exenatide and albiglutide for fasting plasma glucose (–0.7 mmol/L; –1.1 to –0.2 mmol/L]; and taspoglutide 20 mg and dulaglutide 0.75 mg for body weight (–1.5 kg; –2.2kg to –0.8kg).

Clinically marginal or no differences were found for blood pressure, blood lipid levels, and C-reactive protein levels. Once-weekly exenatide increased heart rate compared with albiglutide and dulaglutide (1.4 to 3.2 beats/min) and, although the risk for hypoglyceamia was similar among once-weekly GLP-1RAs, taspoglutide 20 mg had the greatest risk for nausea (odds ratios from 1.9 to 5.9).

The Leicester Diabetes Centre is an international centre of excellence in diabetes research, education and innovation led by Professor Melanie Davies and Professor Kamlesh Khunti, who both took part in the study.

Hosted at Leicester General Hospital, the centre is a partnership between the University Hospitals of Leicester NHS Trust and the University of Leicester.

**Ends**

**Notes to editors**

* For further details, to arrange an interview or more photographs, email [**oliver.jelley@ojpr.co.uk**](mailto:oliver.jelley@ojpr.co.uk)
* The Diabetes Research Centre is based at the Leicester Diabetes Centre.
* The Leicester Diabetes Centre is an international centre of excellence in diabetes research, education and innovation and is led by Professor Melanie Davies and Professor Kamlesh Khunti.
* Hosted at Leicester General Hospital, the Leicester Diabetes Centre is a partnership between the University Hospitals of Leicester NHS Trust and the University of Leicester, working with the city and county Clinical Commissioning Groups. It is a leading applied health research unit committed to improving the lives and care of people with diabetes and other long-term conditions.
* For more information about the Leicester Diabetes Centre, visit [**http://www.leicesterdiabetescentre.org.uk**](http://www.leicesterdiabetescentre.org.uk/)