Exenatide once weekly versus twice daily for the treatment of type 2 diabetes: a randomised, open-label, non-inferiority study
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Summary

Background Exenatide is an incretin mimetic that shares glucoregulatory properties with glucagon-like peptide 1 (GLP-1), and improves glycaemic control, with progressive bodyweight reductions, when administered twice a day in patients with type 2 diabetes. We compared the efficacy of a once-weekly formulation of exenatide to that of a twice daily dose.

Methods A 30-week, randomised, non-inferiority study compared a long-acting release formulation of exenatide 2 mg administered once weekly to 10.4 g exenatide administered twice a day, in 295 patients with type 2 diabetes (haemoglobin A\textsubscript{1c} [HbA\textsubscript{1c}] 8.3\% [SD 1.0\%], mean fasting plasma glucose 9 [SD 2] mmol/L, weight 102 [SD 20] kg, diabetes duration 6.7 [SD 5.0] years). The patients were naive to drug therapy, or on one or more oral antidiabetic agents. The primary endpoint was the change in HbA\textsubscript{1c} at 30 weeks. This study is registered with ClinicalTrials.gov, number NCT00308139.

Findings At 30 weeks, the patients given exenatide once a week had significantly greater changes in HbA\textsubscript{1c} than those given exenatide twice a day (\(\text{--}9\% [SE 0.1\%]\) vs \(\text{--}5\% [0.1\%]\), 95% CI \(\text{--}5.4\%\) to \(\text{--}12\%\); \(p=0.0023\)). A significantly greater proportion of patients receiving treatment once a week versus twice a day achieved target HbA\textsubscript{1c} levels of 7.0% or less (77% vs 61% of evaluable patients, \(p=0.0039\)).

Interpretation Exenatide once weekly resulted in significantly greater improvements in glycaemic control than exenatide given twice a day, with no increased risk of hypoglycaemia and similar reductions in bodyweight.