trial end, 44.8% of subjects randomized to step-wise required 1 or 2 injections/day.

Step-wise intensification of prandial insulin provides glycemic control comparable to basal-bolus treatment with significantly lower hypoglycemia risk and better patient satisfaction.

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Efficacy and Safety of Dulaglutide Versus Placebo and Exenatide in Type 2 Diabetes (AWARD-1)

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Background and Aims: This phase 3, randomized, parallel-arm study compared the efficacy and safety of 2 doses of dulaglutide (DU) with exenatide (EX) or placebo (PL) in type 2 diabetes patients treated with metformin and pioglitazone.
Materials and Methods: Patients (n=976; mean baseline characteristics: age 55.7 years; HbA1C 8.1%; weight 96.0 kg) were randomized (2:2:2:1) openly to EX 10 mcg BID or, in a double-blind fashion, to once-weekly DU 1.5 mg, DU 0.75 mg or PL. After 26 weeks, the PL group was randomized to DU 1.5 mg or 0.75 mg for 26 additional weeks. All others continued with originally assigned treatments for the study duration (52 weeks). The primary hypothesis was that DU 1.5 mg is superior to PL for change in HbA1C from baseline to 26 weeks.
Results: Both DU (1.5 mg, 0.75 mg) doses were superior to EX and PL, as measured by HbA1C change at 26 weeks (−1.51%, −1.30%, −0.99% and −0.46%, respectively, adjusted $p<0.001$), and to EX at 52 weeks (−1.36%, −1.07% and −0.80%, respectively, adjusted $p<0.001$). The incidence of serious adverse events (AEs) was similar among PL and DU groups. The rank order for incidence of gastrointestinal-related AEs among groups was: EX ∼ DU 1.5 mg > DU 0.75 mg > PL. The incidence of symptomatic hypoglycaemia (≤3.9 mmol/L) was 3.2%, 4.3%, 12.3% and 1.4% for DU 1.5 mg, DU 0.75 mg, EX and PL, respectively.
Conclusions: Both once-weekly DU doses demonstrated superior glycemic control compared with PL or EX, and were well tolerated.

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A Sliding Scale Guideline for Obese, Type 2 Diabetes Patients taking Insulin, While on a Low Carbohydrate Diet

PAT POON
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Eighty-five percent of type 2 diabetes patients are obese. Obesity is a risk factor associated with diabetes development, and insulin use often causes weight gain.

The Dr. Poon Metabolic Diet program involves placing the patient on a low-sugar, low-starch, low-saturated fat and low-sodium diet. Before starting any patient on this diet, we order random glucose and C-peptide tests to assess if the patient still has functioning beta cells. In our past studies, we have found that 85% of our obese type 2 diabetes patients taking insulin actually produced normal amounts of insulin. The causes of their poor glycemic control were their obesity as well as bad food choices.

Since the majority of these patients are producing adequate quantities of insulin, if they lose weight, exercise and follow a diet that is low in sugar and starch, they should not require any extra insulin. The less insulin the patients have to take, the higher the probability of losing weight.

One of the risks associated with placing this type of patient on a low-carbohydrate diet is hypoglycemia. If the patient has to consume sugar to treat hypoglycemic symptoms, it will defeat the purpose of them participating in a low-carbohydrate diet. We therefore developed a guideline to adjust the patient's insulin and sulfonylurea doses in order to prevent hypoglycemia while on this diet. Our results have demonstrated that by following this guideline, our patients are able to achieve both an improved glycemic control and weight reduction without hypoglycemia.

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Efficacy and Safety of Dulaglutide Versus Sitagliptin after 52 Weeks in Type 2 Diabetes (AWARD-5)

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Background and Aims: This phase 3, adaptive, double-blind, parallel-arm trial compared once-weekly dulaglutide (DU) with sitagliptin and placebo in metformin-treated patients with type 2 diabetes. The primary objective was to show non-inferiority of DU 1.5 mg versus sitagliptin on change in HbA1C at 52 weeks.
Materials and Methods: Patients (n=1098, mean baseline characteristics: age 54 years, HbA1C 8.1%, weight 86.4 kg, diabetes duration 7 years) were randomized to DU 1.5 mg, DU 0.75 mg, sitagliptin 100 mg or placebo (replaced with sitagliptin after 26 weeks) in a 2:2:2:1 ratio. The statistical plan allowed for superiority testing once the non-inferiority criterion for each of the doses relative to sitagliptin had been met. The study continued until 104 weeks.
Results: Both DU 1.5 mg and 0.75 mg were superior to sitagliptin in reducing HbA1C after 52 weeks (−1.10%, −0.87%, and −0.39%, respectively, adjusted $p<0.001$). Rates of hypoglycemia (plasma glucose ≤3.9 mmol/L and/or symptoms) were 1.6, 1.7, 1.6 and 1.2 events/patient/year for DU 1.5 mg, DU 0.75 mg, sitagliptin and placebo, respectively. No severe hypoglycemia was reported. The most common treatment-emergent gastrointestinal events for DU 1.5 mg and 0.75 mg, respectively, were nausea (17%, 14%), vomiting (13%, 8%), and diarrhea (15%, 10%). The incidence of discontinuations due to adverse events (most commonly for hyperglycemia) or death was 11.2% (DU 1.5 mg), 7.6% (DU 0.75 mg), 10.2% (sitagliptin) and 16.4% (placebo).
Conclusion: Both once-weekly DU doses demonstrated superior glycemic control to sitagliptin after 52 weeks, with an acceptable tolerability and safety profile.

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Safety and Efficacy of Dulaglutide Versus Sitagliptin after 104 Weeks in Type 2 Diabetes (AWARD-5)

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Background and Aims: This phase 3, adaptive, double-blind, parallel-arm trial compared once-weekly dulaglutide (DU), a long-acting GLP-1 receptor agonist, with sitagliptin and placebo in metformin-treated type 2 diabetes patients.
Methods: The primary time point was 52 weeks; final time point was 104 weeks. Patients (n=1098; mean baseline characteristics: age 54 years; HbA1c 8.1%; weight 86.4 kg; diabetes duration 7 years) were randomized to DU 1.5 mg or 0.75 mg once-weekly, sitagliptin 100 mg daily or placebo (up to 26 weeks).