of hypoglycaemia; the rate of confirmed hypoglycaemia was 0.49 events per patient-year with vildagliptin and 0.96 events per patient-year with placebo (p=0.970). Weight remained stable with vildagliptin treatment (adjusted mean change from BL (81 kg) = 0.4 kg vs. -1.0 kg with placebo, p=0.015). Adverse events (AEs) (58.0 vs. 72.7%), serious AEs (14.0 vs. 16.4%), discontinuations due to AEs (4.0 vs. 9.1%) and deaths (0 vs. 5.5%) were reported at a comparable or lower frequency in patients receiving vildagliptin versus patients receiving placebo.
Conclusion: In this uniquely fragile elderly population ≥ 75 years with T2DM and moderate or severe renal impairment, vildagliptin was well tolerated and efficacious, with no increase in the rate of hypoglycaemia compared to placebo despite the marked improvement in glycaemic control.
Clinical Trial Registration Number: NCT00646542
Supported by:Novartis Pharma AG

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Treat 4 Ramadan trial: a randomised control trial comparing liraglutide vs a sulphonylurea as add-on to metformin in patients with established type 2 diabetes
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Background and aims: Treat 4 Ramadan was a randomised control trial comparing a sulphonylurea (SU) or Liraglutide (Lira) in combination with Metformin in patients on either mono or dual oral therapy with established Type 2 diabetes.
Materials and methods: 100 adults (50% male, mean age 52 years and BMI 32 Kg/m^2) were recruited from two UK sites (Leicester and Birmingham). Baseline data were collected ≥14 days prior to commencing their fast and follow-up at 4 (FU1) and 12 weeks (FU2) following Ramadan.
Results: Significantly more patients in the Lira compared to the SU group (FU1:37% vs. 7%, p=0.001; FU2:27% vs. 8%, p=0.03) achieved a composite endpoint of HbA1c <7%, weight reduction of ≥1 kg and no severe hypoglycaemia, defined as leading to hospitalisation. From a baseline of 7.7% there was no change in HbA1c at FU2 in the SU (+0.02%) compared to a 0.3% reduction in the Lira group (p=0.17). No significant differences in HbA1c were observed between prior mono (p=0.43) or dual therapy (p=0.14). Significant reductions were observed in body weight (-4.9 vs. +0.3kg, p=0.02) and diastolic BP (-6.2 vs. -0.06 mmHg, p=0.01) in the Lira compared to the SU group at FU2. More patients in the Lira group achieved the composites of weight reduction and improved HbA1c (p=0.04) and weight reduction and no severe hypoglycaemia (p=0.002) compared to SU. No severe hypoglycaemia was observed in any group.
Conclusion: Lira compared to SU appears to be a safe and well tolerated therapy in combination with Metformin during Ramadan with evidence of weight loss, no increase in severe hypoglycaemia and a trend towards improved HbA1c.
Clinical Trial Registration Number: 201100028427
Supported by: Novo Nordisk

PS 073 SGLT-2 clinical trials

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Verification of the efficacy and safety of tofogliflozin, a novel SGLT2 inhibitor, in Japanese patients with type 2 diabetes mellitus: results from a phase 2/3 clinical study
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Background and aims: Tofogliflozin, a highly selective sodium-glucose cotransporter 2 (SGLT2) inhibitor, reduces blood glucose and body weight by inhibiting renal glucose reabsorption and promoting urinary excretion of excess blood glucose in type 2 diabetes mellitus (T2DM) patients. The characteristics of tofogliflozin, which include high selectivity toward SGLT2, a short half-life and an insulin-independent mode of action, mean that it exerts sustained efficacy with low hypoglycemic risk and can be used in combination with any existing T2DM therapy. This study was undertaken to verify the efficacy and safety of tofogliflozin in Japanese patients with T2DM with inadequate glycemic control on diet/exercise therapy.
Materials and methods: The study was designed as a randomized, double-blind, placebo-controlled, parallel-group comparison. Tofogliflozin 10, 20 or 40 mg (n=58 for each dose) or placebo (n=56) was orally administered once daily for 24 weeks to a total of 230 patients. The primary endpoint was the change from baseline in HbA1c.
Results: Tofogliflozin caused a statistically significant decrease in HbA1c at all doses tested (changes from baseline of 0.0%, −0.8%, −1.0%, and −0.9% in the placebo, 10 mg, 20 mg, and 40 mg groups, respectively; P<0.0001 vs. placebo). In addition, statistically significant decreases in fasting blood glucose (changes from baseline of -0.48, -1.77, -1.99, -1.80 mmol/L in the placebo, 10 mg, 20 mg, and 40 mg groups, respectively; P<0.0001 vs. placebo) and body weight (changes from baseline of −0.4, −2.2, −2.9, and −3.0 kg in the placebo, 10 mg, 20 mg, and 40 mg groups, respectively; P<0.0001 vs. placebo) were observed in the tofogliflozin groups, compared with the placebo group. Moreover, decreased blood pressure, improved HOMA-R and Matsuda index, reduced abdominal circumference, increased adiponectin and HDL-cholesterol levels, and decreased levels of uric acid, alanine aminotransferase and γ-glutamyl transferase were secondarily observed. Regarding safety, the incidences of adverse events were 44.6%, 60.3%, 53.4%, and 53.4% in the placebo, 10 mg, 20 mg, and 40 mg groups, respectively. Adverse drug reactions occurring at an incidence ≥5% higher than those in the placebo group included increased blood ketone bodies accompanying ketonuria, and pollakiuria. One patient (1.7%) in each of the 10 mg and 40 mg groups experienced symptoms suggesting hypoglycemia, while no patient in the placebo group and no patient in the 20 mg group experienced this adverse event. Tofogliflozin was well tolerated up to a dose of 40 mg.
Conclusion: In Japanese patients with T2DM with inadequate glycemic control on diet/exercise therapy, tofogliflozin, orally administered once daily for 24 weeks, exhibits significant blood glucose- and body weight-lowering effects and was well tolerated. Thus, the efficacy and safety of tofogliflozin has been verified.
Supported by: CHUGAI PHARMACEUTICAL CO.,LTD.

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Safety and efficacy of empagliflozin monotherapy in a 52-week study in Japanese patients with type 2 diabetes mellitus
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Background and aims: Empagliflozin (EMPA) is a potent and selective sodium glucose cotransporter 2 inhibitor in development for the treatment of type 2 diabetes mellitus (T2DM). A Phase II trial investigated the safety and efficacy of EMPA as monotherapy over 52 weeks in Japanese patients with T2DM.
Materials and methods: The study comprised a 12-week dose-finding period and a 40-week extension period. In the dose-finding period, patients (mean