New analysis shows tirzepatide consistently reduces body weight regardless of body mass index (BMI) before treatment

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Tirzepatide, a medication authorized to treat obesity and/or type 2 diabetes, consistently reduces bodyweight regardless of the patient's

body mass index (BMI before treatment), from the range of overweight to class III obesity.

The study, to be presented at this year's European Congress on Obesity (Venice, Italy, 12-15 May) is by Prof. Carel Le Roux, University College Dublin, Ireland, and Dr. Louis J Aronne, Comprehensive Weight Control Center, Division of Endocrinology, Diabetes & Metabolism, Weill Cornell Medicine, New York, U.S., and colleagues from Eli Lilly and Company, the manufacturer of tirzepatide.

Tirzepatide (Mounjaro) was approved by the US Food and Drug administration (FDA) and the European Medicines Agency (EMA) for the treatment of type 2 diabetes in 2022. In November 2023, the FDA approved tirzepatide (Zepbound) for chronic weight management in adults with BMI ≥ 30 kg/m^2 or BMI ≥ 27 kg/m^2 with at least one weight-related comorbidity.

Also in November 2023, the EMA Committee for Medicinal Products for Human Use offered a positive opinion on extension of the Mounjaro label to include weight management in adults with BMI ≥ 30 kg/m^2 or BMI ≥ 27 kg/m^2 and at least one weight-related comorbid condition.

This new analysis examined the impact of baseline body mass index (BMI) category on weight reduction in these trials. The phase 3 SURMOUNT trials examined the efficacy and safety of tirzepatide versus placebo in people with a BMI of 30 kg/m^2 and above or 27 kg/m^2 with at least one weight-related comorbidity without type 2 diabetes (SURMOUNT-1, 72 weeks), with type 2 diabetes (SURMOUNT-2, 72 weeks), and without type 2 diabetes after a 12-week intensive lifestyle intervention (SURMOUNT-3, 72 weeks from randomization) or after an 88 week intervention (SURMOUNT-4, 36-week open label tirzepatide lead-in and 52 weeks following randomization).

In this post-hoc subgroup analysis, BMI subgroups were defined by 27-30 (overweight), 30-35 (obesity class I), 35-40 (obesity class II), and 40 kg/m^2 and above (obesity class III). The authors examined the percent change in body weight from randomization to week 72 (SURMOUNT-1, -2, and -3) or week 52 (SURMOUNT-4), as well as the proportions of participants achieving the weight reduction targets of 5, 10, and 15%. The analyses included all randomized participants who received 1 or more doses of the study drug (tirzepatide or placebo), excluding data after premature discontinuation of study drug.

The analysis showed that across SURMOUNT 1-4, tirzepatide treatment resulted in significant body weight reductions relative to placebo, irrespective of the BMI subgroup. In addition, more participants randomized to tirzepatide than placebo achieved the body weight reduction targets of 5, 10, and 15%. Across the BMI subgroups, up to 100% of tirzepatide-treated participants achieved weight reduction of 5% or more vs. 30% with placebo in SURMOUNT-1, up to 93% vs. 43% in SURMOUNT-2, and up to 97% vs. 15% in SURMOUNT-3.

The respective proportions achieving body weight reduction of at least 10% were up to 93% vs. 16% in SURMOUNT-1, up to 76% vs. 14% in SURMOUNT-2, and up to 92% vs. 8% in SURMOUNT-3.

Furthermore, up to 85% of participants achieved weight reduction of at least 15% with tirzepatide vs. 7% with placebo in SURMOUNT-1, up to 60% vs. 3% in SURMOUNT-2, and up to 78% vs. 4% in SURMOUNT-3.

In SURMOUNT-4, during the 36-week open-label tirzepatide treatment, the mean body weight reduction was 21%. After this lead-in period, further weight reductions of ≥5, ≥10, and ≥15% were achieved by up to 70%, 39%, and 22%, respectively, of participants treated with tirzepatide vs. 2%, 2%, and 0% with placebo.

"Regardless of baseline BMI, tirzepatide consistently reduced body weight versus placebo in people with obesity across the SURMOUNT 1-4 trials. Further analyses are needed to explore and understand why patients with type 2 diabetes have less weight loss in these trials than those without type 2 diabetes. Across the SURMOUNT 1-4 trials, treatment with tirzepatide, along with a reduced-calorie diet and increased physical activity, consistently resulted in clinically-significant weight reductions of 5% or more, 10% or more, or 15% or more, as compared to placebo, regardless of baseline BMI subgroup, in adults with obesity or overweight (BMI of 27 and above)," said Dr. Aronne.

Prof. Le Roux added, "Tirzepatide is one of the most effective treatments we have for the disease of obesity, and not only can we control the disease but we are also able to disrupt the complications of obesity such as type 2 diabetes."

Provided by European Association for the Study of Obesity

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