**Change in body composition with tirzepatide in adults with early-onset obesity in SURMOUNT-1**

**Aim**:This post-hoc analysis assessed the change in body composition (BC) in participants with early (age <25 years)- vs later-onset obesity from SURMOUNT-1.

**Methods**:A subgroup of participants with early- (N=84) vs later-onset obesity (N=147) with available BC data (Hologic DXA scan) were included in this analysis. Baseline and change from baseline in BC (fat, lean, and visceral fat mass (FM)) at Week-72 were assessed.

**Results**: Participants with early- vs later-onset obesity had higher body mass (105.7 vs 99.6 kg), higher FM (50.1 vs 45.9 kg) and lower percent visceral FM (vFM) (0.18% vs 0.22%) at baseline (all p≤0.018). Baseline lean body mass did not differ (52.9 vs 51.1 kg). At Week-72, greater reductions in total body FM (early-onset: 17 vs 2 kg [35% vs 5%]; later-onset: 15 vs 5 kg [33% vs 10%]), total body lean mass (early-onset: 6 vs 1 kg [11% vs 2%]; later-onset: 5 vs 1 kg [11% vs 3%]) and total vFM (early-onset: 0.57 vs 0.02 kg [41% vs 5%]; later-onset: 0.63 vs 0.17 kg [39% vs 9%]) were observed with tirzepatide vs placebo in both subgroups, respectively (all p<0.001).

**Conclusion**: In this post-hoc analysis of the DXA subgroup of SURMOUNT-1, participants with early-onset obesity had higher FM and lower percent vFM at baseline vs those with later-onset obesity. Greater reductions in body weight observed with tirzepatide-treatment than placebo were associated with proportionally greater reductions in FM vs lean mass and greater reductions in percent vFM compared to placebo, irrespective of age of obesity diagnosis.