Reduction in systolic blood pressure (SBP) with semaglutide treatment is not due to weight loss (WL) alone: data from SUSTAIN 1 – 5 Subramanian G (1), Bain SC (2), Davies M (3), Knop FK (4), Vrazic H (5), Skjøth TV (5), Lingvay I (6) (1) Novo Nordisk Ltd., Gatwick, UK; (2) Swansea University, Swansea, UK; (3) University of Leicester, Leicester, UK; (4) University of Copenhagen, Copenhagen, Denmark; (5) Novo Nordisk A/S, Søborg, Denmark; (6) University of Texas Southwestern, Dallas, TX, USA
Semaglutide significantly reduces HbA1c, body weight (BW) and SBP. This post-hoc analysis investigates the contribution of WL to SBP reductions.
SUSTAIN 1–5 randomised 3918 patients with inadequately controlled type 2 diabetes for 30 or 56 weeks to once-weekly semaglutide 0.5 or 1.0 mg or comparator (sitagliptin, once-weekly exenatide, insulin glargine or placebo). Using a mediation analysis, reduction in SBP was categorised as WL-mediated (indirect) or WL-independent (direct effect of semaglutide). SBP reduction was also evaluated across weight-change categories.
Across SUSTAIN 1–5, mean SBP reductions ranged from −2.6 to −5.1 mmHg and −2.7 to −7.3 mmHg, with semaglutide 0.5 and 1.0 mg, respectively, vs −1.0 to −2.3 mmHg with comparators (p<0.02 vs comparator for all trials except SUSTAIN 1 [both doses] and SUSTAIN 5 [0.5 mg]). Mean BW changes ranged from −3.5 to −4.3 kg and −4.5 to −6.4 kg with semaglutide 0.5 and 1.0 mg, respectively, vs −1.9 to +1.2 kg with comparators (p<0.0001 vs all comparators). Across all trials, both WL-dependent and WL-independent mechanisms contributed to observed SBP reduction with semaglutide. Greater reductions in SBP with semaglutide vs comparators occurred across all weight-change categories (>4.0 kg, 0–4.0 kg, no WL/BW gain).
With semaglutide, greater WL was generally associated with greater SBP reductions. However, SBP reductions were driven by both WL-mediated and WL-independent mechanisms, suggesting that the SBP reduction observed with semaglutide is not explained by WL alone.