Background: The introduction of GLP-1 receptor agonists has revolutionized weight loss and metabolic health management. Yet, comparative studies on different agents within standardized clinical settings are lacking. This study aims to bridge this gap by comparing the individual and combined impacts of tirzepatide and semaglutide on clinical parameters in a structured weight loss program (www.zone.health).

Methods: A retrospective observational study analyzed the clinical outcomes of 111 participants enrolled in a hybrid weight loss program combining pharmacotherapy using semaglutide or tirzepatide, alongside dietary guidance, digital biomarker monitoring and behavioral counseling for a 3 month period. Mean patient age was 43.47 ± 10.28, 57.7% were females and 42.3% were males. At baseline, mean weight and body mass index (BMI) were 97.50 ± 21.88, and 33.94 ± 6.20 respectively. Majority of patients (58.6%) started on tirzepatide 2.5mg, reaching doses of 7.5mg or 10mg at 3 months, and 41.4% started on semaglutide at 0.25mg increasing to 1 mg at the same mark. The 3 month post-intervention analysis assessed changes in BMI, body composition, lipids, HbA1c, uric acid, and eGFR.

Results: At 3 months, all participants showed significant improvements in clinical parameters, notably in weight (-8.6%), fat mass (-14%), total cholesterol (-9.1%), LDL (-11%), triglycerides (-16.3%), uric acid (-7%), and HbA1c levels (-4.8%) ($p < 0.001$). Tirzepatide was associated with favorable outcomes and significant reductions in waist circumference (-7.5% vs -4.9%, $p = 0.025$), HbA1c (-3.3% vs 5.7%, $p = 0.034$), fat mass (-15.4% vs -11.7%, $p = 0.033$), uric acid (-3.2% vs +11.9%, $p = 0.007$), and eGFR (-4.9% vs -0.8%, $p = 0.046$) compared to semaglutide.

Conclusions: The study confirms GLP-1 receptor agonists' positive impact on weight loss and metabolic health, highlighting tirzepatide's superior effectiveness due to its dual GLP-1 and GIP receptor action, unlike semaglutide, which targets only GLP-1. Limitations include, the study's retrospective design, which may affect causality inference, a short follow-up period limiting long-term effect insights, and participant selection criteria that might reduce generalizability.

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Effectiveness of Tirzepatide vs. Semaglutide: Outcomes of a Hybrid Weight Loss Program, Zone.Health

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