Efficacy and safety of Semaglutide vs Tirzepatide for Weight Loss in Adults With Overweight or Obesity, a systematic review and meta analysis

Table 1: Study Characteristics

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Author, Year | Study Design | Sample Size | Intervention | Comparator | Objectives | Follow up | Outcomes Measured | Inclusion and exclusion criteria |
| [Patricia J. Rodriguez](https://jamanetwork.com/searchresults?author=Patricia+J.+Rodriguez&q=Patricia+J.+Rodriguez), et al. 2024[[1]](#footnote-1) | cohort study | Total: 18 386 (After propensity match)  tirzepatide: 9193; semaglutide: 9192 | Tirzepatide: Initial dose of 5 mg  Semaglutide: Initial dose of 0.25 mg  (with dose escalation every 4 weeks to reach the target maintenance dose) | Tirzepatide Vs Semaglutide | on-treatment weight loss and rates of gastrointestinal adverse events | Mean days : 165 | Weight loss: ≥5%, ≥10%, ≥15% (hazard ratios);  Percentage weight change;  Gastrointestinal AEs: Hazard ratios. | IC: New users of drugs with with overweight (BMI ≥27) or obesity (BMI ≥30); no prior GLP-1 RA use  EC: History of severe gastrointestinal AEs |

Table 2: Efficacy Outcomes

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Author, Year | Baseline weight | % Weight change | |  |  | | --- | --- | | % Achieving ≥5% Weight Loss |  |  |  | | --- | |  | | % Achieving ≥10% Weight Loss | % Achieving ≥15% Weight Loss | BMI | lipid profiles changes |
| [Patricia J. Rodriguez](https://jamanetwork.com/searchresults?author=Patricia+J.+Rodriguez&q=Patricia+J.+Rodriguez), et al. 2024 | Baseline weight:  Tirzepatide: 110 (25.7) kg  Semaglutide: 109 (25.2) kg  (End point not measured) | 3 months:   * Tirzepatide: −5.9% (95% CI, −6.0% to −5.8%) * Semaglutide: −3.6% (95% CI, −3.7% to −3.4%)   6 months:   * Tirzepatide: −10.1% (95% CI, −10.4% to −9.9%) * Semaglutide: −5.8% (95% CI, −6.0% to −5.5%)   At 12 months:   * Tirzepatide: −15.3% (95% CI, −16.0% to −14.5%) * Semaglutide: −8.3% (95% CI, −9% to −7.6%) | Tirzepatide: 81.8% (95% CI, 79.8%-83.7%  Semaglutide: 66.5% (95% CI, 64.3%-68.7%) | Tirzepatide: 62.1% (95% CI, 59.7%-64.3%)  Semaglutide: 37.1% (95% CI, 34.6%-39.4%) | Tirzepatide: 42.3% (95% CI, 39.8%-44.6%)  Semaglutide: 18.1% (95% CI, 16.1%-20.0%) | Not measured | Not measured |

Table 3: Safety outcomes

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Author, Year | Adverse events | Serious Adverse events | Drug Discontinuation Rate | |  |  |  |  |  | | --- | --- | --- | --- | --- | | Other side effects |  |  |  |  | | Conclusion |
| [Patricia J. Rodriguez](https://jamanetwork.com/searchresults?author=Patricia+J.+Rodriguez&q=Patricia+J.+Rodriguez), et al. 2024 | No significant differences in the risk of gastrointestinal adverse events (AEs) | Not reported | Tirzepatide: 5140 [55.9%];  semaglutide: 4823 [52.5%] | Not reported | In the population of adults with overweight or obesity, use of tirzepatide was associated with significantly greater weight loss than semaglutide. |

1. Rodriguez PJ, Cartwright BM, Gratzl S, Brar R, Baker C, Gluckman TJ, Stucky NL. Semaglutide vs tirzepatide for weight loss in adults with overweight or obesity. JAMA internal medicine. 2024 Sep 1;184(9):1056-64. [↑](#footnote-ref-1)