

INTRODUCTION

- Type 2 diabetes mellitus (T2DM) is a progressive metabolic disorder requiring combination therapy for optimal glycemic control.
- Despite the availability of several oral antidiabetic drugs (OADs), maintaining sustained HbA1c reduction with minimal adverse effects remains challenging.
- Linagliptin (a DPP-4 inhibitor) and dapagliflozin (an SGLT2 inhibitor) act through complementary mechanisms.
- Their combination may provide additive benefits on glycemic control and body weight with an acceptable safety profile.

OBJECTIVE

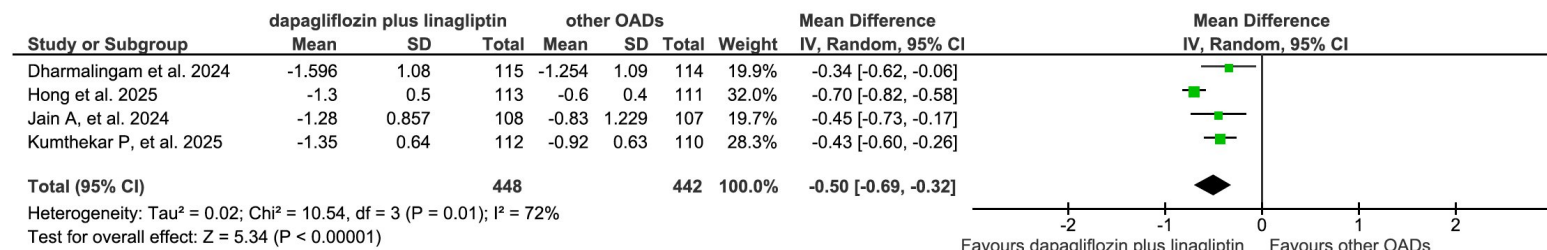
- To evaluate the effect of the dapagliflozin and linagliptin combination compared with other OADs (linagliptin with/or without placebo or dapagliflozin plus vildagliptin) in individuals with T2DM.

METHODS

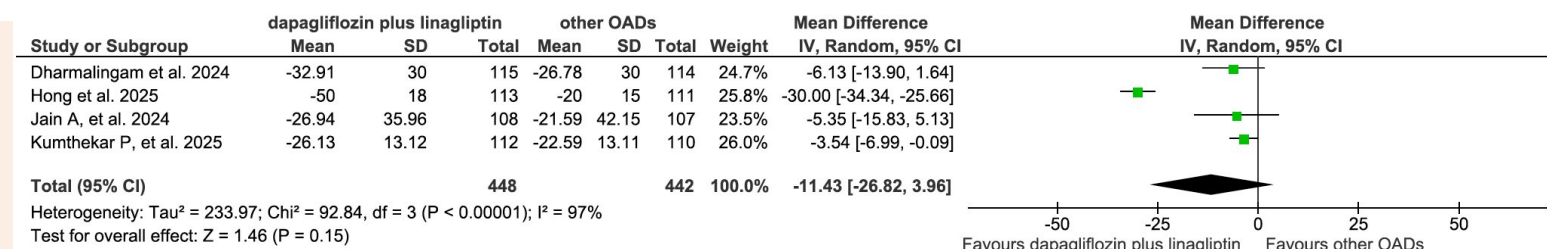
- PubMed and Google were searched to identify randomized controlled trials (RCTs) evaluating dapagliflozin + linagliptin in adults (≥ 18 years) with T2DM.
- Studies reporting efficacy and/or safety outcomes of the dapagliflozin + linagliptin combination were included.
- Efficacy Endpoints:** Change in HbA1c, fasting plasma glucose (FPG), and postprandial glucose (PPG).
- Safety Endpoints:** Change in body weight and incidence of adverse events
- Data were pooled using a random-effects model.
- Meta-analysis was performed with Review Manager (RevMan) version 5.4.
- Sensitivity analyses were conducted to evaluate the robustness of the results.

RESULTS

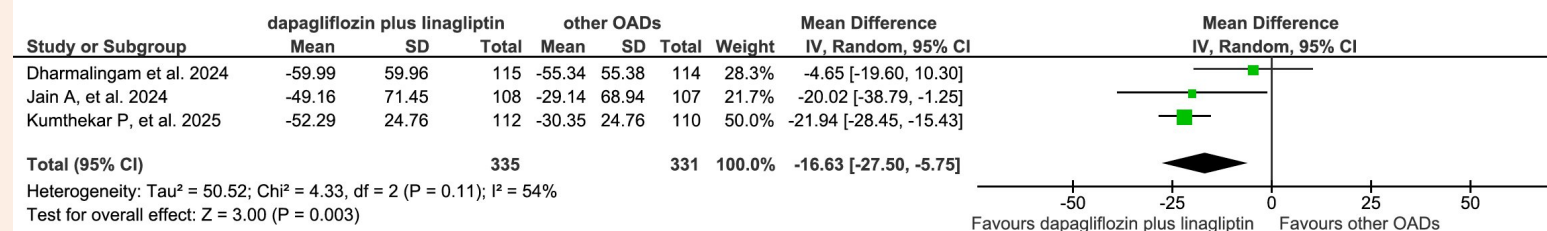
HbA1c



FPG



PPG



- Studies included:** 4 RCTs with 890 participants (1 study: 12 weeks; 3 studies: 16 weeks).
- HbA1c:** Significant reduction (MD -0.50%; 95% CI -0.69 to -0.32; $p < 0.001$; $I^2 = 72\%$). Sensitivity analysis excluding 12-week study: MD -0.42%; $I^2 = 0\%$.
- FPG:** Non-significant reduction (MD -11.43 mg/dL; 95% CI -26.82 to 3.96; $p = 0.15$; $I^2 = 97\%$).
- PPG:** Significant reduction (MD -16.63 mg/dL; 95% CI -27.50 to -5.75; $p = 0.003$; $I^2 = 54\%$).
- Body weight:** Reduced with combination therapy (MD -0.82 kg; 95% CI -1.02 to -0.61; $p < 0.001$; $I^2 = 19\%$).
- Adverse events:** Comparable between groups (OR 0.80; 95% CI 0.54 to 1.18; $p = 0.26$; $I^2 = 0\%$).

CONCLUSION

- Combined therapy with dapagliflozin and linagliptin demonstrated significant improvements in glycemic parameters (HbA1c, FPG, and PPG) and reduction in body weight among adults with T2DM.
- The combination therapy was well tolerated, with no increase in adverse events, supporting its efficacy and safety as a dual antidiabetic treatment option.

Conflict of Interest: All authors are associated with Sqarona Medical Communications LLP, Pune, which provides medical writing services.

Funding: None

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