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THE EFFECT OF TIRZEPATIDE IN PEOPLE WITH TYPE 2 DIABETES: AN UPDATED META-ANALYSIS OF SURPASS TRIAL

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I Made Siswadi Semadi,[1] Ivana Beatrice Paulus,[2] Ida Bagus Aditya Nugraha,[1] Ketut Suastika[1]
[1]*Endocrinology and Metabolism Division, Department of Internal Medicine, Faculty of Medicine Udayana University / Sanglah Hospital, Kota Denpasar, Indonesia*
[2]*Wangaya General Hospital, Kota Denpasar, Indonesia*

OBJECTIVES
Tirzepatide acts as a dual glucose-dependent insulinotropic polypeptide and glucagon-like peptide-1 receptor agonist. Up to now, no subgroup meta-analysis has compared the efficacy and safety of tirzepatide in type 2 diabetes compared to each class of diabetic treatment. This meta-analysis aimed to investigate this knowledge gap.

METHODOLOGY
Studies were searched using the keywords: [(type 2 diabetes mellitus) or (diabetes mellitus) or (diabetic)] and (tirzepatide) in several databases of Cochrane Central Register of Controlled Trials (CENTRAL), Pubmed, ScienceDirect, Ovid. All references were reviewed using critical appraisal center for evidence-based medicine checklist. The descriptions of the extracted data are guided by Preferred Reporting Items for Systematic Reviews (PRISMA) statement with grade approach. This study is registered in prospero: id crd42022328793. Two hundred sixty-five papers were initially collected, and seven studies pooled and entered review synthesis.

RESULTS
Seven RCTs involving 3562 patients were analysed. Over 12–52 weeks, individuals receiving tirzepatide had significantly greater lowering of HbA1C [mean difference (MD) = -1.4% (95% confidence interval (CI): -1.71 to -1.1); $p<0.01$; $i^2 = 96.8\%$], fasting glucose [MD = -29.1 mg/dl (95% CI: -36.37 to– -21.93); $p<0.01$; $i^2 = 99.1\%$], 7-point SMBG [MD = -19.94 mmol/l (95% CI: -36.37 to -21.93); $p<0.01$; $i^2 = 100\%$]. Weight loss was also greater than 5%. [RR = 22.07 (95% CI: 6.3 to 77.3); $p<0.01$; $i^2 = 98.2\%$].

CONCLUSION
Tirzepatide led to a higher decrease in glycaemic HbA1C than placebo and insulin. FPG was significantly lower in the tirzepatide arm compared to the GLP-1 RA group.