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Background

Type 2 diabetes mellitus (T2DM) triggers long-lasting and progressive metabolic disorders, causing a severe health issue resulting in several high predominance and dangerous complications. Liraglutide is a glucagon-like peptide-1 (GLP-1), while gliclazide is an oral antihyperglycemic agent.

Objectives

To measure the efficacy of gliclazide and liraglutide on T2DM patients.

Methods

We performed systematic reviews and meta-analyses by searching two databases, PubMed and Web of Science (WOS), for relevant studies published in the literature during May 2021. We included clinical trials and observational studies and extracted the patients' baseline characteristics and outcomes. We used the Cochrane Handbook of Systematic Reviews of Interventions and the Newcastle Ottawa scale to assess the included studies' quality. The statistical analysis was performed by STATA Version 16.

Results

Our meta-analysis included three studies (two clinical trials and one observational study) with 137 participants, 71 in the gliclazide and 66 in the liraglutide groups. Gliclazide had a non-significant reduction of glycated hemoglobin (HbA1c) compared to liraglutide (mean difference [MD] 0.53; 95% CI -0.01, 1.07; P = 0.06). Gliclazide had a non-significant decreasing of body weight compared to liraglutide (standardized mean difference [SMD] 0.32; 95% CI -0.02, 1.07; P = 0.06). Gliclazide had a non-significant decreasing of low-density lipoprotein cholesterol (LDL-C) and high-density lipoprotein cholesterol (HDL-C) compared to liraglutide (SMD -0.11; 95% CI -0.45, 0.23; P = 0.53) and (MD -0.02; 95% CI -0.15, 0.10; P = 0.7).

Conclusions

Liraglutide is more effective in reducing HbA1c, body weight LDL-C, and HDL-C than gliclazide.

Keywords

Efficacy, Liraglutide, Gliclazide, Type II Diabetes Mellitus, Systematic Review, Meta-Analysis.