INPLASY PROTOCOL

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None declared.

Effects of treatment with GLP-1RA on prediabetes: a systematic review and meta-analysis

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Review question / Objective: **This study aimed to evaluate the effects of Glucagon-like peptide-1 receptor agonist (GLP-1RA) on prediabetes.**
Condition being studied: **In 2018, nearly 88 million adults in the United States aged >18 had prediabetes1 and nearly 70 percent will develop diabetes2. Moreover, about 50.1% Chinese adults may have had prediabetes according to the survey results in 20103. The prevalence of prediabetes and diabetes have imposed a substantial economic and social burden to patients and society4. Previous statement strengthen that weight loss was an effective method to prevent type 2 diabetes mellitus (T2DM)5–7 and cardiovascular disease (CVD)8.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 22 August 2022 and was last updated on 22 August 2022 (registration number INPLASY202280085).

INTRODUCTION

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METHODS

Participant or population: Broad People.

Intervention: GLP-1RA.

Comparator: Placebo.

Study designs to be included: RCTs.

Eligibility criteria: Studies were included in our meta-analysis if 1) the subjects were clinically diagnosed with prediabete , 2) the subjects were treated with liraglutide, and 3) The study design was RCT. Articles were excluded based on the following criteria: 1)editorials, letters, reviews, commentaries, or interviews;2) lack of original data; 3) diseases other than prediabete; 4) The study design was not RCT.

Information sources: Studies were retrieved from PubMed, Embase, Cochrane Library, and Web of Science databases to evaluate the effect of GLP-1RA on prediabetes.

Main outcome(s): OR measures the strength of the association between GLP-1RA treatment and reversal of diabetes. Weighted mean difference with 95% CI was determined to assess the effects of treatment with GLP-1RA on glucose change, weight, BMI, waist circumference, SBP,DBP.

Quality assessment / Risk of bias analysis: We evaluated quality assessment of included studies using risk of bias tool in Revman5.4.

Strategy of data synthesis: The meta-analysis and meta-regression were performed by Stata version 16 (Stata Corp, College Station, TX).

Subgroup analysis: Due to too few included studies, subgroup analysis has not been performed yet.

Sensitivity analysis: Sensitivity analysis was performed by excluding documents one by one to assess the stabilities of the results.

Country(ies) involved: China.

Keywords: GLP-1RA, prediabetes, glucose metabolism, meta-analysis.

Contributions of each author:
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