INPLASY

Can Probiotics Reduce Serum Lipid Levels in Obesity: a systematic review and network meta-analysis

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ADMINISTRATIVE INFORMATION

Support - NA.

Review Stage at time of this submission - The review has not yet started.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202440091

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 22 April 2024 and was last updated on 22 April 2024.

INTRODUCTION

Review question / Objective A variety of probiotics have been applied to reduce serum lipids of patients with obesity, but it is still controversial which is the best.

Condition being studied Hyperlipidemia is common in patients with obesity. Currently, a series of probiotics have been developed for regulating serum lipids in patients with obesity. Some meta-analysis has proved the efficacy of probiotics. However, it is still unclear which probiotics is best. Therefore, we will conduct the problem by network meta-analysis.

METHODS

Participant or population Patients diagnosed with obesity.

Intervention Probiotics component such as Saccharomyces, Bifidobacterium, Bacillus, Lactobacillus and the compound of different probiotics.

Comparator Sham-control or active-control.

Study designs to be included Randomized control trials.

Eligibility criteria Peer-reviewed randomized control trails will be eligible for inclusion. And language will be restricted to English.

Information sources Electronic databases will be searched from set up to April 24, 2024 including PubMed, Cochrane library, Web of Science, Embase.

Main outcome(s) The change of serum of lipids, including total cholesterol, triglyceride, high-density lipoprotein and low-density lipoprotein.

Quality assessment / Risk of bias analysis We will use Cochrane risk-of-bias tool (ROB 2.0) to evaluate the quality of included studies.

Strategy of data synthesis Network meta-analysis will be performed by OpenBUGS, and STATA. We will express continuous and binary outcomes in terms of mean differences and risk ratio, respectively, with corresponding 95% confidence intervals. In pairwise meta-analysis, heterogeneity will be assessed by the I-square and a fixed model will be conducted if I-square $<$ 50%. Global inconsistency and local inconsistency will be assessed by STATA. Finally, league figure and surface under the cumulative ranking curve will be conducted by OpenBUGS.

Subgroup analysis Subgroup analysis will be conducted if necessary.

Sensitivity analysis Before selecting model, sensitivity analysis will be accomplished if sufficient studies are available and necessary.

Country(ies) involved China.

Keywords Obesity, serum lipids, probiotics, network meta-analysis.

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