

INPLASY PROTOCOL

To cite: Hu et al. Fecal Microbiota Transplantation for Weight and Glycemic Control of Obesity as well as the Associated Metabolic Diseases : Meta-Analysis & Comprehensive Assessment. Inplasy protocol 202330084. doi: 10.37766/inplasy2023.3.0084

Received: 23 March 2023

Published: 23 March 2023

Corresponding author:
Diangeng Hu

690259419@qq.com

Author Affiliation:
Jiangnan University

Support: The National Nature Science Foundation of China (No.31972052,31820103010, 32021005).

Review Stage at time of this submission: Completed but not published.

Conflicts of interest:
None declared.

INTRODUCTION

Review question / Objective: The authors conducted a meta-analysis and comprehensive review of the weight and blood glucose management associated with faecal microbiota transplantation

Fecal Microbiota Transplantation for Weight and Glycemic Control of Obesity as well as the Associated Metabolic Diseases : Meta-Analysis & Comprehensive Assessment

Hu, DG¹; Zhao, JX²; Zhang, H³; Gu, ZN⁴; Wang, G⁵.

Review question / Objective: The authors conducted a meta-analysis and comprehensive review of the weight and blood glucose management associated with faecal microbiota transplantation (FMT) as well as metabolic diseases related to FMT in order to provide clinical guidance for the therapies of nonalcoholic fatty liver disease (NAFLD) as well as type 2 diabetes mellitus (T2DM).

Background: The number of obese persons has significantly increased during the last several decades.¹ There are currently few effective medication therapies for metabolic illnesses such type-2 diabetic mellitus (T2DM), heart disease, as well as nonalcoholic fatty liver disease (NAFLD), which are associated to obesity.^{2, 3} Despite the fact that bariatric surgery aids in weight loss and lessens health issues, It is invasive and has a high risk of illness and death.⁴ It is vitally necessary to discover new, effective treatments for the control of obesity and associated metabolic diseases.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 23 March 2023 and was last updated on 23 March 2023 (registration number INPLASY202330084).

(FMT) as well as metabolic diseases related to FMT in order to provide clinical guidance for the therapies of nonalcoholic fatty liver disease (NAFLD) as well as type 2 diabetes mellitus (T2DM).

Background: The number of obese persons has significantly increased during the last several decades.¹ There are currently few

effective medication therapies for metabolic illnesses such type-2 diabetic mellitus (T2DM), heart disease, as well as nonalcoholic fatty liver disease (NAFLD), which are associated to obesity.^{2, 3} Despite the fact that bariatric surgery aids in weight loss and lessens health issues, It is invasive and has a high risk of illness and death.⁴ It is vitally necessary to discover new, effective treatments for the control of obesity and associated metabolic diseases.

Rationale: In-vivo animal models suggest that the gut microbiota may actually contribute to obesity, and several studies have demonstrated that the gut microbiota of obese people is abnormal.⁵⁻⁷ People have attempted to alter the gut microbiota to alter this process since there may be a connection between obesity and it. A cutting-edge method for restoring the diversity and balance of the gut microbiota is faecal microbiota transplantation (FMT).⁸⁻¹⁰ Controlling the gut flora has been linked in studies to microbiome dysbiosis, which is a major contributor to the emergence of type-2 diabetes, non-alcoholic fatty liver disease, as well as obesity. Researchers have examined the potential use of FTM in the treatment of metabolic conditions like obesity. However, there is no scientific data demonstrating how FTM impacts glycemic control and weight in individuals with obesity and other metabolic illnesses. In order to enhance clinical therapy, this research employed a thorough investigation and meta-analysis how FTM, NAFLD, T2DM, and other linked metabolic illnesses manage their weight and blood glucose levels.

METHODS

Strategy of data synthesis: Two researchers independently looked for, screened, and collected data from the literature. A decision is reached after consulting a third party or bargaining with them when a dispute or disagreement arises. Author, publication year, country, sample size, age, gender, and outcomes including weight, BMI, fasting blood sugar (mmol/L), fasting insulin (mU), homeostatic model assessment of insulin resistance

(HOMA-IR), and haemoglobin A1C were all taken from the papers (HbA1C).

Eligibility criteria: Each of the 12 items receives a score between 0 and 2, for a total of 24 points. The quality of a study was judged as moderate from ages 9 to 16, and excellent from ages 17 to 24.

Source of evidence screening and selection: The Methodological indicator for non-randomized studies (MINORS) scale was used to evaluate the strength of the evidence in each research. by two independent researchers. Each of the 12 items receives a score between 0 and 2, for a total of 24 points. The quality of a study was judged as moderate from ages 9 to 16, and excellent from ages 17 to 24.

Data management: STATA 15.1 was used to analyse all of the data (Stata Crop LP, College Station, TX).¹⁴ The I2 and Q tests were used in order to check for heterogeneity. If the heterogeneity test yields $P \geq 0.1$ and $I^2 \leq 50\%$, the research are equivalent, and the combined analysis will utilise the fixed effect model.

Language restriction: No Language restriction.

Country(ies) involved: China.

Keywords: FMT; Weight; Blood glucose; Obesity; Obesity associated metabolic diseases.

Contributions of each author:

Author 1 - diangeng hu.

Author 2 - Jianxin Zhao.

Author 3 - Hao Zhang.

Author 4 - Zhennan Gu.

Author 5 - Gang Wang.