INPLASY

Predictive factors of total body weight loss after endoscopic sleeve gastroplasty

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ADMINISTRATIVE INFORMATION

Support - EDA Dachang hospital.

Review Stage at time of this submission - Piloting of the study selection process.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 2 July 2025 and was last updated on 2 July 2025.

INTRODUCTION

*R*eview question / Objective Factors predictive total body weight loss and/or weight regain at 3-month, 6-month, 12-month after primary endoscopic sleeve gastroplasty.

Rationale ESG (endoscopic sleeve gastroplasty) is an minimally-invasive, effective and durable procedure for weight control. Current evidences suggest an averagely 15% total body weight loss after the procedure. However, about 10% or more patients may experience poor response or weight regain by time. Moreover, there has been yet a systematic review to explore the predictive factors for the final outcome. Hence, we would like to perform the study.

Condition being studied Patient with clinically overweight (BMI >= 27), obesity (BMI > 30), or patients who have lower body weight undergoing ESG due to medical need and adequate indications.

METHODS

Search strategy The search resource includes PubMed, Embase and Cochrane library. The search terms include "endoscopic sleeve gastroplasty", "endoscopic gastric plication", "endoscopic bariatric procedures", "obesity", "overweight", "Weight regain" and "poor/suboptimal response".

Participant or population Patient with clinically overweight (BMI >= 27), obesity (BMI > 30), or patients who have lower body weight undergoing ESG due to medical need and adequate indications.

Intervention Endoscopic sleeve gastroplasty by Overstitch.

Comparator None (single arm analyis).

Study designs to be included Randomized controlled trials, cohort studies (either prosective or retrospective).

Eligibility criteria Inclusion: Fully published articles included patients underwent ESG by Overstitch device for weight control with records of total body weight loss (TBWL) at least 6-12 months after the procedure.

Exclusion:
1.Insufficient outcome data (eg. Only shorterm, 1-month post procedural data available, only EWL without TBWL)
2.Case reports or insufficient case numbers
3.Using other gastric plication devices other than Overstitch
4.No data for predictive factors of weight regain/recividism or better/worse TBWL
5.Studies primarily included adolescents or children.

Information sources Electronic databases, full articles, and trial registers.
(Contact with authors may not be feasible due to seemingly large workload).

Main outcome(s) Relevant factors (either positive or negative) for total body weight loss (kg, %) at 6-12 months, including technical, clinical, or behavioral factors.
The timing is long enough to assess the adequacy of the procedure.

Quality assessment / Risk of bias analysis The risk of bias analysis will be performed by Cochrane risk of bias tool 2.0 (RoB 2.0) or New-Castle Ottawa score according to the study types.

Strategy of data synthesis The data will be primarily analyzed by Comprehensive Meta-analysis (CMA) V4. A random-effects model is planned to reduced the influence of heterogeneity.

Subgroup analysis Subgroup analysis will be performed according to the types of predictive factors and other parameters as approriate. The analysis will also be guided by heterogeneity analysis and/or meta-regression.

Sensitivity analysis Sensitvity analysis will be performed by excluding an article at one time to assess robustness. The analysis will also be guided by according to the types of predictive factors and other parameters as approriate, as well as heterogeneity analysis and/or meta-regression.

Language restriction English.

Country(ies) involved Taiwan - EDA Dachang hospital.

Contributions of each author
Author 1 - Jen-Hao Yeh - The authors initiated the project, performed literature search, data extraction, statistics and manuscript writing.
Author 2 - Chu-Kuang Chou - The authors initiated the project, performed literature search, and data extraction.
Author 3 - Kun-Feng Tsai - The author contributed to the development of the selection criteria, and the risk of bias assessment strategy.
Author 4 - Sheng-Shih Chen - The author read, provided feedback and help revise the final manuscript.