

# INPLASY

## A comprehensive meta-analysis of the therapeutic potential of enteral nutrition in the management of inflammatory bowel disease in adults

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### ADMINISTRATIVE INFORMATION

**Support** - None.

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

**Conflicts of interest** - None declared.

**INPLASY registration number:** INPLASY2023120125

**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 31 December 2023 and was last updated on 31 December 2023.

### INTRODUCTION

**Review question / Objective** There remain multiple challenges in treating inflammatory bowel disease (IBD), with enteral nutrition (EN) considered one of the most valuable yet controversial options for adults. Hence, this meta-analysis aims to compare the effectiveness of EN in combination with conventional medication therapy versus conventional medication therapy alone in treating IBD.

**Condition being studied** Inflammatory bowel disease (IBD) is a chronic inflammatory condition that primarily affects the gastrointestinal (GI) tract, including ulcerative colitis (UC) and crohn's disease (CD). Patients with IBD suffer from recurring symptoms like abdominal pain, diarrhoea, rectal bleeding and weight loss, which can significantly impact their quality of life. Furthermore, IBD may lead to serious complications such as intestinal strictures, fistulas and colon cancer. Enteral nutrition (EN) is a

therapeutic method that involves delivering liquid formulations directly into the GI tract, either orally or through a tube.

### METHODS

**Participant or population** All patients who met the diagnostic criteria for IBD, aged 18 years or older, without restrictions on gender, race or nationality.

**Intervention** The test group received conventional medication therapy combined with EN for IBD.

**Comparator** The control group received conventional medication therapy alone.

**Study designs to be included** Randomized controlled trials (RCTs) and cohort studies.

**Eligibility criteria** Inclusion criteria also contained clear efficacy criteria, including effective rate, prevalence of adverse reactions, hemoglobin levels, albumin levels and BMI. Exclusion criteria

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for this study included: (1) Non-IBD patients; (2) Pediatric population; (3) Review articles, letters to the editor, case reports and other non-original research articles; (4) Duplicate publications of the same study.

**Information sources** Chinese and English databases, including Pubmed, Embase, Web of Science, Cochrane Library, Clinical trial, CNKI, Chinese biomedical literature, VIP and Wanfang databases, were searched.

**Main outcome(s)** The database search was conducted up until August 2023. Main outcomes included effective rate, prevalence of adverse reactions, hemoglobin levels, albumin levels and BMI.

**Quality assessment / Risk of bias analysis** The quality of the included randomized controlled trials was assessed by two evaluators using the risk of bias criteria outlined in the Cochrane systematic review manual. The quality of the cohort study was evaluated using the Newcastle-Ottawa Scale (NOS). Studies with scores between 1 and 3 were considered low quality, scores between 4 and 6 were considered moderate quality and scores between 7 and 9 were considered high quality.

**Strategy of data synthesis** Data analysis was conducted using ReviewManager (RevMan) 5.3 software. The Q test was employed to assess heterogeneity among the included studies, with  $I^2 \leq 50\%$  and  $P \geq 0.1$  indicating low heterogeneity, and  $I^2 > 50\%$  and  $P < 0.1$  indicating significant heterogeneity. Subgroup analysis was performed to explore potential sources of heterogeneity and interpret the results accordingly. Given the potential heterogeneity resulting from different baseline treatment medication in the included studies, a random-effects model was employed for the meta-analysis. For categorical data, relative risk (RR) and mean difference (MD) with corresponding 95% confidence intervals (CI) were calculated, and statistical significance was set at  $P < 0.05$ . The same analytical methods were applied for both RCTs and cohort studies. Publication bias was assessed using funnel plots to examine the efficiency of the included studies.

**Subgroup analysis** The articles were stratified based on language, NOS score, type of conventional medicine and duration of follow-up.

**Sensitivity analysis** In the Revman software, the sensitivity of the article was reflected by the change in effect size after deleting a particular study.

**Country(ies) involved** China.

**Keywords** Inflammatory bowel disease; Enteral nutrition; Meta-analysis.

**Contributions of each author**

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