

INPLASY PROTOCOL

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None declared.

Pre-/probiotics improves postoperative adaptive immunity in colorectal cancer patients: a systematic review and meta-analysis

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Review question / Objective: This meta-analysis aimed to evaluate the overall effect of pre-/probiotics on postoperative adaptive immunity in perioperative colorectal cancer patients. **Condition being studied:** Previous meta-analyses have suggested that oral pre-/probiotics improves clinical outcomes in patients with colorectal cancer during perioperative period. However, the effect of the pre-/probiotics on postoperative immunity was not included in those analyses.

Information sources: We searched electronic databases, including PubMed, the Cochrane Library, EMBASE, Ovid and China Biology Medicine Disc (<http://www.sinomed.ac.cn/>).

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 05 June 2021 and was last updated on 05 June 2021 (registration number INPLASY202160011).

INTRODUCTION

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Condition being studied: Previous meta-analyses have suggested that oral pre-/probiotics improves clinical outcomes in patients with colorectal cancer during perioperative period. However, the effect of the pre-/probiotics on postoperative immunity was not included in those analyses.

METHODS

Participant or population: Perioperative colorectal cancer patients.

Intervention: Use of enteral pre-/probiotics during perioperative period.

Comparator: No use of enteral pre-/probiotics during perioperative period.

Study designs to be included: Randomized controlled trial.

Eligibility criteria: (1) study design: randomized controlled trial; (2) participants: perioperative colorectal cancer patients; (3) intervention versus control: pre-/probiotics use versus non-use; and (4) outcomes: levels of serum CD4+, CD8+, CD4+/CD8+, IgG, IgA, and IgM (7-12 days after surgery).

Information sources: We searched electronic databases, including PubMed, the Cochrane Library, EMBASE, Ovid and China Biology Medicine Disc (<http://www.sinomed.ac.cn/>).

Main outcome(s): The outcomes included the levels of postoperative serum CD4+ T-cells, CD8+ T-cells, CD4+-to-CD8+ ratio, IgG, IgA, and IgM (7-12 days after surgery).

Quality assessment / Risk of bias analysis: We used the Cochrane Collaboration tool to assess the risk of bias of the RCTs from the following 7 aspects: sequence generation, allocation concealment, blinding of participants and personnel, blinding of outcome assessors, incomplete outcome data, selective outcome reporting and other bias.

Strategy of data synthesis: We used mean difference (MD) and 95% confidence interval (95% CI) to estimate the pooled outcomes. Heterogeneity across studies was calculated by the Q test and I² statistic. If there was no heterogeneity, we used a fixed-effects model, otherwise, the random-effects model was used.

Subgroup analysis: The following subgroup analyses may be used: High-quality studies

versus low-quality studies; Large sample studies versus small sample studies; Pre-/probiotics use ≥ 5 days vs Pre-/probiotics use < 5 days.

Sensitivity analysis: We performed sensitivity analyses to assess the relative influence by excluding the studies one by one and changing the effects model.

Language: No language limits be imposed on the search.

Country(ies) involved: China.

Keywords: pre-/probiotics; colorectal cancer; adaptive immunity; perioperative period; meta-analysis.

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