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Meta-analysis of the Effects of Postoperative Exercise Intervention on Rehabilitation Outcomes in Patients with Gastrointestinal Tumours

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ADMINISTRATIVE INFORMATION

Support - N/A.

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

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 20 September 2024 and was last updated on 20 September 2024.

INTRODUCTION

Review question / Objective To evaluate the efficacy of exercise intervention in patients with gastrointestinal tumours.

Condition being studied Gastrointestinal malignancy is one of the major causes of cancer death. A large number of patients suffer from this disease, with various lesion locations, making it a public health problem of global concern. The Cancer Statistics 2020 report revealed gastrointestinal cancer as one of the leading causes of death for patients with cancer in the United States, with the highest diagnosis and death rate in colon cancer and the second highest in pancreatic cancer. Current treatment options for gastrointestinal cancer mainly include surgery. Despite the significant survival benefit of surgical treatment, there are still potential risks in the perioperative period, including serious postoperative complications, which adversely

affect postoperative recovery, increase medical expenditure and reduce the quality of life of patients. Exercise intervention is one of the key factors for successful and rapid rehabilitation; it can promote the functional recovery of the circulatory, digestive and other systems and help prevent the development of postoperative complications, such as hospital-acquired pneumonia and deep vein thrombosis of the lower extremities.

METHODS

Participant or population (1) patients diagnosed with gastrointestinal tumours, and (2) patients aged ≥ 18 years.

Intervention Postoperative exercise intervention.

Comparator The participants in the experimental group received planned postoperative exercise intervention, regardless of the type and time of

exercise; the participants in the control group received standard postoperative rehabilitation treatment or health education.

Study designs to be included Randomised controlled trials.

Eligibility criteria 10 high-quality RCT studies.

Information sources Three English databases, PubMed, EMBASE and Cochrane Library, and three Chinese databases, China National Knowledge Infrastructure, Wanfang and VIP, were systematically searched for studies published from database inception to 20 March 2024 in accordance with the PRISMA guidelines.

Main outcome(s) The meta-analysis results showed that no statistical significance was identified in terms of 6MWD (31.74; 95% confidence interval [CI]: -24.60, 88.09). However, rehabilitation exercise for patients with gastrointestinal cancer could effectively shorten the ambulation time (-12.72; 95% CI: -15.14), length of hospitalisation time (-1.54; 95%CI: -2.46), eating time (-12.63; 95%CI: -14.99), exhaust time (-9.99; 95%CI: -11.92, -8.01) and defecation time (-21.25; 95%CI: -23.52, -18.9).

Quality assessment / Risk of bias analysis (1) bias due to the randomisation process, (2) bias due to allocation concealment, (3) bias due to the blinding method, (4) bias due to the integrity of results and (5) and bias due to the selective reporting of results.

Strategy of data synthesis Statistical analysis was conducted using RevMan 5.3 software (Cochrane Collaboration, Oxford, UK).

Subgroup analysis None.

Sensitivity analysis The random-effects model (dersimonan-laird) was used for the analysis.

Country(ies) involved China.

Keywords gastroenteric tumour; nursing care; rehabilitation; motion; meta-analysis.

Contributions of each author

Author 1 - Xia-juan Lv - LXJ conceived of the study, helped to draft the manuscript, as well as read and approved the final manuscript.
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