Prehabilitation as a Strategy to Improve Postoperative Outcomes in Frail Cancer Patients Undergoing Elective Surgery: A Systematic Review and Meta-Analysis

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Background
Prehabilitation is a process that aims to improve a patient’s functional capacity before surgery. It may reduce postoperative complications and improve outcomes in cancer patients, particularly those frail. However, the effectiveness of prehabilitation in frail cancer patients undergoing elective surgery is not well understood.

Methods
Our search included electronic databases such as PubMed, Embase, and Cochrane and was conducted until January 2022. We had studies that compared a prehabilitation or preoperative optimization program to standard care, postoperative rehabilitation, or a placebo. The primary outcomes of interest were postoperative complications, length of hospital stay, 30-day mortality, and hospital readmission rate. We used R version 4.0.3 and the metafor and meta packages for statistical analysis.

Results
A total of 8 studies met the inclusion criteria for the meta-analysis, with 581 patients in the prehabilitation group and 675 patients in the control group. The results showed that prehabilitation was associated with a significant reduction in postoperative complications (risk ratio (RR) 0.83, 95% confidence interval (CI) 0.69 to 0.98). Prehabilitation was also associated with a significant reduction in length of hospital stay (mean difference -2.32 days, 95% CI -4.34 to -0.29) and a non-significant reduction in 30-day mortality (RR 0.45, 95% CI 0.13 to 1.59). There was no significant difference in hospital readmission rate between the prehabilitation and control groups (RR 1.09, 95% CI 0.38 to 3.15).

Conclusion
Prehabilitation may improve hospital stay and reduce postoperative complications in frail cancer patients undergoing elective surgery. Further research is needed to confirm these findings and determine rehabilitation interventions’ optimal duration and intensity. Clinicians need to consider the potential benefits of prehabilitation in caring for frail cancer patients preparing for surgery.

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Conflict of interest
No conflict of interest to declare.