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Effects of Early Postoperative Exercise on Body Composition After Gastrectomy: Secondary Analysis of a Randomized Clinical Trial

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Background: Patients with gastric cancer experience progressive muscle loss after surgery. Postoperative sarcopenia has been associated with increased mortality and complications; however, the effects of exercise on body composition after gastrectomy remain unclear.

Objective: To evaluate the effects of an early postoperative exercise program on CT-measured skeletal muscle area in patients following gastrectomy.

Methods: This secondary analysis of a randomized clinical trial was conducted from January 2023 to July 2024 at a tertiary center in Seoul, Korea. Fifty-two patients with stage I–III gastric cancer undergoing minimally invasive gastrectomy were randomized to exercise or usual care (1:1). The exercise group received supervised inpatient sessions on postoperative days 1–2, followed by a 4-week home-based program. Body composition was assessed via CT at the L3 level at baseline and 6 months postoperatively. Outcomes included skeletal muscle area, visceral fat area, and subcutaneous fat area (cm^2).

Results: Of 52 randomized participants, 38 (exercise, n=20; usual care, n=18) with available CT data were analyzed; 14 were excluded due to unavailable follow-up CT. Skeletal muscle area decreased in both groups from baseline to 6 months (exercise: 123.3±35.28 to 120.3±34.47 cm^2; usual care: 129.2±29.57 to 120.7±26.78 cm^2), with no significant between-group difference (interaction P=.220). Visceral and subcutaneous fat areas also showed no significant differences (P=.323 and P=.978, respectively). In subgroup analyses, muscle mass tended to be better maintained in the exercise group among males (P=.078) and patients aged ≤60 years (P=.054).

Conclusion: Early postoperative exercise did not significantly preserve skeletal muscle area at 6 months after gastrectomy. However, hypothesis-generating subgroup findings suggest potential benefits in males and younger patients, which may inform tailored exercise strategies in future trials.

Keywords

Gastric cancer; Exercise; Body composition; Randomized Clinical Trial

Conflict of Interest & Ethical Approval

yes

Abstract submitters declaration

yes

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