The effect of exercise interventions on hospital length of stay and admissions during cancer treatment

A systematic review and meta-analysis

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Background

- Leading oncology organizations (e.g. COSA, ASCO) recommend incorporating exercise into standard practice due to the physical and psychological benefits.[1,2]
- Patients undergoing treatment face numerous challenges, including unexpected admissions to hospital, which can impact quality of life and health systems.
- It is unclear whether exercising during cancer treatment regimens can reduce hospital length of stay and the number of admissions.

Aim To assess the effect of participating in an exercise intervention compared with no exercise on the duration and frequency of hospital admissions during cancer treatment

Methods

Database search: conducted on 2nd August 2023 for keywords “cancer”, “treatment”, “exercise” and “hospitalization”

Inclusion criteria: 1) RCTs, 2) Exercise intervention, 3) Conducted during chemotherapy, radiation or transplant, 4) Assessed hospital length of stay (days / # admissions)

Dual screened: abstracts, full texts and Risk of Bias (RoB 2)

Meta-analysis: Mean difference or differences in proportion effect sizes with their 95% confidence intervals (CIs) were then calculated for each study. data from each study were pooled using restricted maximum likelihood random-effects modelling

Level of evidence: Using the GRADE system, the findings were scored with a low level of evidence.

Results

3919 abstracts were screened, which included 118 full-text articles, with 20 articles included.

2635 participants included (1383 in exercise interventions, 1252 in control groups).

Average 52.2±11 years

18 adult, 2children studies

62% female

Most studies in Germany (n=7) or US (n=5)

Mean sample size=70 (range 29-711)

Blood cancers (n=14)

Aerobic Ex (n=17/20), Resistance Ex (n=12/20)

Exercise programs varied by duration, length, intensity

Participants spent **1.40 days less in hospital** (95% CI: -2.26 to -0.54) in the exercise groups compared to the control groups

Participants had an **8% reduced risk of being admitted to hospital** in the exercise groups (Difference in proportions: -0.08, 95% CI: -0.13 to -0.03)

Conclusion

Exercise during cancer treatment contributed to an 8% lower rate of being admitted to hospital and reduced hospital length of stay by 1.40 days.

Limitations: Heterogeneity of study design and included populations suggests that future research is warranted to confirm these findings.

See full paper recently published in British Journal of Sports Medicine -->

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References

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2. Ligibel et al., Exercise, Diet, and Weight Management During Cancer Treatment: ASCO Guideline. Journal of Clinical Oncology, 2022.

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