

PRESENTATION: ORAL PRESENTATION (FAST PRESENTATION)

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936 – Muscle strength improves independently of kinesiophobia in breast cancer patients undergoing neoadjuvant chemotherapy: a secondary analysis of a randomized trial

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Introduction: Exercise improves physical and psychosocial outcomes in breast cancer patients. However, kinesiophobia remains a potential barrier to engagement. It is unclear whether fear of movement modulates physiological adaptations to exercise during neoadjuvant chemotherapy.

Methods: This secondary analysis of an ongoing randomized controlled trial included women with stage II–III breast cancer undergoing neoadjuvant chemotherapy. Participants were allocated to a resistance training group (RT; n=9), a combined training group (CT; n=8), or a control group (CG; n=7). RT and CT performed once-weekly supervised resistance training for 12 weeks; CT additionally performed aerobic exercise immediately after resistance training. Peak isometric muscle strength (PIMS) was assessed via knee extensor dynamometry, and kinesiophobia via the Tampa Scale of Kinesiophobia (TSK). A two-way analysis of variance (Group × Time) with Tukey post hoc was applied. Pearson correlations were assessed between Δ PIMS and Δ TSK, and between values at baseline and post-intervention. Analyses followed the intention-to-treat principles with expectation-maximization data imputation.

Results: A significant group × time interaction was observed for PIMS ($F=4.49$; $p=0.017$; $\eta^2=0.176$, $\omega^2=0.102$, indicating a large effect size), with higher values in RT (254.2, standard deviation ± 84.79 N) and CT (236.2 $\pm$ 81.56 N) compared to CG (124.3 $\pm$ 26.84 N) at 12 weeks, with no difference between exercise groups. No significant effects were found for TSK ($p>0.05$). No correlations were observed between Δ TSK and Δ PIMS ($r=-0.138$; $p=0.349$), nor between TSK and PIMS at baseline ($r=-0.062$; $p=0.775$) or post-intervention ($r=0.238$; $p=0.263$).

Conclusion: Supervised resistance and combined training improved muscle strength but did not affect kinesiophobia. The absence of association suggests that neuromuscular adaptations occur independently of fear-related psychological factors. However, the small sample and preliminary results from ongoing research limit inference.

Ethics: Research Ethics Committee Approval (CAAE 50717115.4.3001.5078).

Registry: Brazilian Registry of Clinical Trials (ReBEC), RBR-3rf99vw.

Keywords: breast neoplasms; strength training; kinesiophobia; neoadjuvant therapy; antineoplastic agents.