

FEASIBILITY RANDOMIZED CONTROLLED TRIAL OF PREHABILITATION DURING NEOADJUVANT CHEMOTHERAPY FOR PEOPLE WITH BREAST CANCER: A MIXED METHODS STUDY

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BACKGROUND

- Neoadjuvant chemotherapy (NACT) impairs physical fitness.
- Prehabilitation (prehab) improves surgical outcomes in other cancer populations
- No studies have investigated multimodal prehab during NACT in people with breast cancer

Aims:

- To assess feasibility of conducting a full-scale randomized controlled trial (RCT) of multimodal prehab during NACT.
- Derive estimates of intervention efficacy.

METHODOLOGY

Design: Multi-site parallel arm RCT (1:1) of multimodal prehab vs. usual care

Participants: Women with non-metastatic breast cancer with NACT and planned surgery

Intervention:



Exercise

- 4x/week home-based moderate intensity aerobic training at RPE 4-6
- Upper quadrant resistance training



Nutritional counselling

- At baseline with access to dietitian throughout duration of NACT



Stress management

- Coping, stress management, mindfulness and guided imagery delivered by psychologist

Primary outcomes: recruitment, attrition, adherence, and study-related adverse events

Qualitative data: prehab feasibility and acceptability, participant experiences

Secondary outcomes: Physical fitness (six-minute walk test, grip strength, anthropometrics), patient-reported outcomes (quality of life, fatigue, anxiety and depression, upper quadrant function, cognitive function)

Quantitative data analysis:

- Feasibility metrics were analyzed descriptively
- Linear mixed effects models were used for all secondary outcomes

Qualitative data analysis:

- Inductive thematic analysis

RESULTS

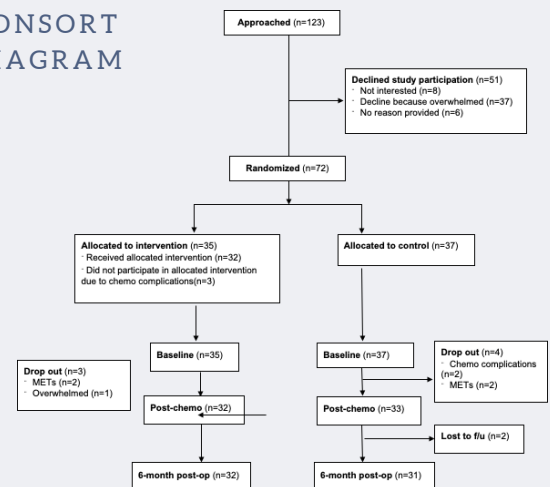
Recruitment rate: 72/123 eligible participants (53%) randomized over a 24-month period

Attrition: 13% overall, no adverse events

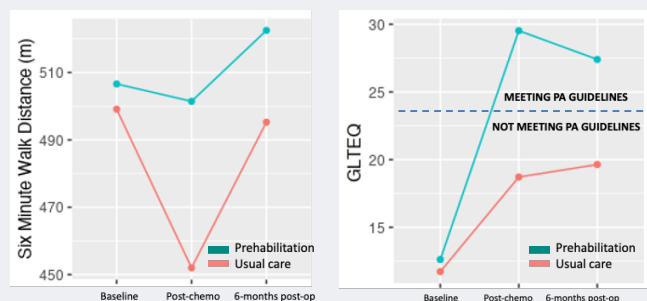
Adherence: defined as adherent (>70% prescribed volume completed in each session), partially adherent (>70% of prescription completed in half of all sessions), or non-adherent (<70% in all sessions)

- n=22 provided adherence data
- **Aerobic adherence:** 41% adherent, 45% partially adherent, 14% non-adherent
- **Resistance adherence:** 26% adherent, 32% partially adherent, 41% non-adherent

CONSORT DIAGRAM



EXPLORATORY OUTCOMES



Prehab participants maintained physical fitness, had less fatigue, and higher physical activity (PA) levels even 6-months post-surgery

QUALITATIVE THEMES



CONCLUSION

- The study demonstrated feasibility of recruitment, low attrition
- Prehab during NACT was safe, feasible, and very well received by participants
- Prehab mitigated reductions in physical fitness and maintained PA levels throughout the study period
- An adequately powered RCT to assess effectiveness is warranted

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