

FEASIBILITY AND PRELIMINARY EFFICACY OF MULTIMODAL PREHABILITATION IN PATIENTS WITH NSCLC RECEIVING NEOADJUVANT THERAPY

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BACKGROUND

Patients with non-small cell lung cancer (NSCLC) receiving neoadjuvant therapy (NAT) can experience a decline in cardiopulmonary fitness (CRF) and lung function (FEV1, DLCO) during treatment. In this study we aimed to explore the feasibility of a supervised multimodal prehabilitation program in patients with NSCLC receiving NAT as well as its preliminary efficacy to prevent potential declines associated with treatment.

METHODS

Design & participants

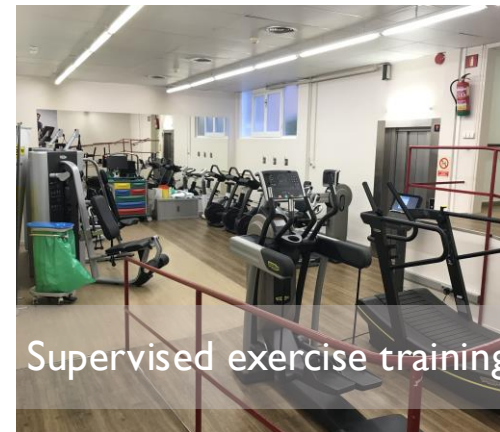
- Prospective cohort study in NSCLC patients planned for NAT followed by surgery.
- Multimodal prehabilitation was offered to all potential candidates
- Patients were assessed at baseline and after NAT.

Outcomes

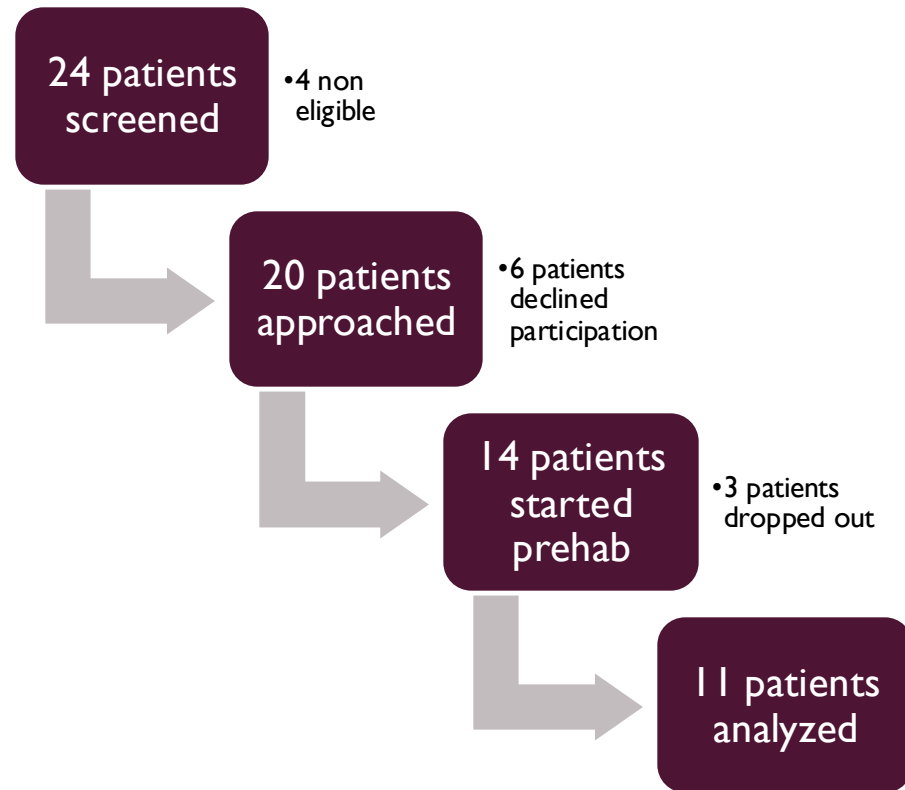
- ✓ VO₂peak
- ✓ Secondary CPET-derived parameters
- ✓ Pulmonary function

METHODS

- Multimodal prehabilitation consisted on:
 - Supervised twice weekly exercise training combining endurance + resistance training
 - Individual assessment and dietary recommendations +/- supplementation
 - Psychological support if needed/requested



RESULTS



Recruitment rate

- 70% of eligible accepted

Retention rate

- 11 out of 14 finished prehab
- All 14 patients were analyzed

Adherence and AE

- Median attendance 8.5 sessions (67% of prescribed)
- No related AE

RESULTS

- VO_2 peak declined after NAT ($p=.058$) while maximal workload remained stable (103 ± 39 vs. 99 ± 41 , $p=.130$)
- Reduction in VO_2 peak was accompanied by a decrease in hemoglobin levels (13.7 ± 1.4 to 12.4 ± 1.8 g/dL, $p=.05$)
- VO_2 at anaerobic threshold and oxygen pulse declined non-significantly ($p=.327$ and $.173$ respectively)
- Lung function (FEV1, FVC) remained stable but Diffusion Capacity of the Lungs for Carbon Monoxide (DLCO) declined

CONCLUSION

Patients with NSCLC scheduled for NAT followed by surgery exhibit low CRF. Multimodal prehabilitation is feasible and safe in this population but it is not associated with improvements in CRF.