

Can inspiratory muscle training relieve symptoms of dyspnoea and improve quality of life for advanced cancer patients? A pilot study.

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Background: Dyspnoea is a common symptom of advanced cancer patients, and can impact on physical, social and psychological wellbeing. Currently the use of opioids is recommended for people suffering with chronic dyspnoea, despite an association to longer term health problems. Inspiratory muscle training (IMT) promotes chronic adaptations within the inspiratory musculature and has consistently been shown to reduce dyspnoea and improve lung mechanics, functional exercise capacity and quality of life in a variety of clinical populations, however this has yet to be tested in patients with advanced cancer.

Methodology: Advanced cancer patients (n=3) suffering from dyspnoea were recruited from Derby Royal Hospital, and consented to complete an incremental IMT programme for 9 weeks. At baseline they were given advice / education on breathlessness management strategies and asked to record self-set goal achievement in a daily diary. Functional measurements taken at baseline, and post 3 and 9 weeks included a 6 minute walk test (6MWT), spirometry and maximal inspiratory mouth pressure (MIP). Additionally, participants completed a St. Georges Respiratory Questionnaire (SGRQ) at all time points and contributed to a focus group at the end of the study.

Results: We found that all participants showed a significant functional improvement after 9 weeks of IMT as measured by the 6MWT; although the distance travelled did not change ($P > 0.05$), the dyspnoea and exertion perceived by each participant during the 6MWT was significantly reduced ($P > 0.05$). MIP increased in two of the participants (by 40% and 50%), but remained the same for one participant who had a higher than predicted baseline MIP. During the focus group all participants asserted that this technique had helped them in their daily life and was easy to fit into their schedules. Encouragingly, all participants are continuing to use their IMT device on a maintenance programme since the end of the trial. No significant results were found with the SGRQ or with the goal-setting diary.

Conclusion: IMT is a safe, effective and well-tolerated intervention for advanced cancer patients suffering from dyspnoea. A randomised controlled trial with a larger group of patients, and which also looks at reduction of opioid use as an end point, is currently being planned.