**THE EFFECTS OF INSPIRATORY MUSCLE TRAINING IN PHASE IV CARDIAC REHABILITATION (CR) PATIENTS.**

**SCHOOL OF SPORT & EXERCISE SCIENCES, UNIVERSITY OF KENT.**

**R., Sullivan, J., Dickinson, S., Meadows.**

Breathlessness is a common symptom post-cardiac event causing pain, discomfort & reduces functional capacity. Clinical populations (COPD & cancer) suggest inspiratory muscle training (IMT) should be incorporated into rehabilitation programmes.

**Aims:** To investigate whether IMT using PowerBreathe ® would provide pulmonary benefit to Phase IV CR patients.

**Methodology:** Participants were recruited from local phase IV CR groups. Intervention: 8 week IMT using a PowerBreathe ®.

Training sessions: 30x breaths, 10x week AM & / or PM. Training recorded in a log book.

Participants placed into either IMT group (n=11) device was resisted (approximately 50% of PImax) or placebo group (n=6) where the device provided minimal resistance (3 cmH20).

All assessments taken at baseline and post-IMT intervention. Spirometry, maximum inspiratory mouth pressure (PImax) and NIJMEGEN questionnaire evaluated respiratory responses. A six minute walk test (6MWT) measured functional capacity.

**Results:** Over the 8 week training periodPImax significantly improved in the IMT group when compared to the placebo group (see Table 1) *(p = 0.025).* NIJMEGEN scores suggested a significant difference between pre and post measures *(p = 0.001)* in the placebo group where there was an improvement in scores*.* IMT showed no significant improvement.There was no significant difference in 6MWT distance between testing periods or groups (*p = 0.30 and p = 0.613* respectively) (See Table 2).

Table 1. Results of PImax (cm H20) in IMT and Placebo group at baseline and post-IMT intervention. Results are expressed as Mean ± SD.

|  |  |  |
| --- | --- | --- |
| **PImax** | **IMT** | **Placebo** |
| **Pre** | **Post** | **Pre** | **Post** |
| **Mean ± SD** | 86.69 ± 6.90 | 95.40 ± 7.85 | 110.23 ± 9.34 | 105.89 ± 10.64 |
| **Change** | 8.71 ± 7.51 | - 4.35 ± 14.40 |

Table 2. Results of 6MWT total distance (m) for IMT and Placebo group at baseline and post IMT-intervention. Results are expressed as mean ± SD.

|  |  |  |
| --- | --- | --- |
| **6MWT** | **IMT** | **Placebo** |
| **Pre** | 439.47 ± 109.42 | 509.73 ± 101.51 |
| **Post** | 432.76 ± 126.63 | 490.56 ± 74.7 |
| **Change** | -6.71 | -19.17 |

**Conclusion:** Significant increase in PImax for Phase IV CR participants completing IMT. NIJMEGEN score although statistically significant in the placebo group, indicates no clinical significance compared to IMT intervention and could be due to personal feelings on the day or recall issues. 6MWT was unaffected by IMT; this could be due to poor test sensitivity. Further research should investigate whether improved functional capacity can be achieved with IMT in earlier stages of CR. Also, additional collection of quality of life measures to explore benefits of IMT on breathlessness experience.

**Correspondance email:** rs494@kent.ac.uk

**Correspondence Address:**

**20 Bracken Lea**

**Wayfield**

**Chatham**

**Kent**

**ME5 0BZ**

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