Feasibility of web-based protocol in a 12 weeks home-based IMT program for individuals with COPD

Sørensen, Dorthe; Svenningsen, Helle

Publication date: 2016

Citation for published version (APA):

General rights
Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

Download policy
If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.
Feasibility of web-based protocol in a 12 weeks home-based IMT program for individuals with COPD

VIA Health Promotion & Rehabilitation
Centre for Research and development
DK-8200 Aarhus, Denmark

Mrs. Dorthe Sørensen, RN, PhD
dsr@via.dk

Mrs. Helle Svenningsen RN, PhD
hesv@via.dk

Background
Although inspiratory muscle training (IMT) has been proven effective in inspiratory muscle function, exertional dyspnoea, and exercise tolerance and is frequently applied in individuals with COPD, training-adherence remains a challenge. Furthermore, participants’ inability to maintain effective training levels with mechanical threshold loading (MTL) is a well-known issue in IMT.

Aim
To investigate the feasibility and adherence of a web-based protocol with a feedback function using mechanical threshold loading (MTL) as home based IMT in individuals with COPD.

Method
Thirty-six individuals with inspiratory muscle weakness were randomly selected from a pulmonary rehabilitation program to perform 12 weeks of MTL with either a web-based protocol (n=17) or a usual protocol with a paper logbook (n=19). All participants performed two daily sessions of 30 breaths.

In the intervention group, training was executed with the highest tolerable intensity of maximal inspiratory mouth pressure (PImax), and feedback was web-based on effort scores that used the 10-item Borg Category Ratio®. Training in the control group was executed with 30% of PImax with no feedback.

Feasibility, adherence, training intensity, PImax, and six minute walk tests were evaluated. Student’s t-tests and Fischer’s exact test were used for statistics.

Results
Groups were comparable in terms of gender, age, marital status, spirometry, BMI, pre-PImax, walk test and dropout rates.

The intervention group reported a mean of 210 (168;251) training sessions versus the control group 161 (116;205), p=0.05.

The intervention group increased the walk distance by 46 meters versus 15 meters in the controls. Differences in PImax were insignificant, with a trend towards the intervention group. The average improvements in PImax was 10 cmH2O in the intervention group and 5.5 in the controls, however difference was insignificant between the groups.

Conclusion
IMT with mechanical threshold loading executed with the highest tolerable intensity based on effort scores showed adequate feasibility, significant better training adherence, significant better outcome in six minutes of walk test and better improvements in PImax than IMT with executed with 30% of PImax.