

Review: respiratory rehabilitation improves health related quality of life in chronic obstructive pulmonary disease

Lacasse Y, Broseau L, Milne S, et al. *Pulmonary rehabilitation for chronic obstructive pulmonary disease*. *Cochrane Database Syst Rev* 2002;(3):CD003793 (latest version 27 Jun 2001).

QUESTION: In patients with chronic obstructive pulmonary disease (COPD), is respiratory rehabilitation more effective than conventional community care for improving health related quality of life (HRQL) and functional and maximal exercise capacity?

Data sources

Studies were identified by searching Medline (1966–2000), CINAHL (1982–2000), Cochrane Airways Group’s registry of randomised controlled trials (RCTs) in COPD (up to 2000), and lists of conference abstracts. Bibliographies of relevant articles were reviewed, and experts in the field were contacted for unpublished studies.

Study selection

Studies published in any language were selected if they were RCTs comparing respiratory rehabilitation (any inpatient, outpatient, or home based rehabilitation programme that lasted ≥ 4 wks and included exercise therapy with or without any form of education or psychological support) with conventional community care, and $>90\%$ of patients had a clinical diagnosis of COPD with either a best recorded FEV₁/forced vital capacity ratio of individual patients < 0.7 or best recorded FEV₁ of individual patients $< 70\%$ of the predicted FEV₁ value.

Data extraction

2 reviewers extracted data on patient characteristics; the setting, components, and duration of the rehabilitation programme; and outcomes. Outcomes included HRQL (Chronic Respiratory Disease Questionnaire) and maximal (incremental cycle ergometer test) or functional (6 minute walk test) exercise capacity.

Main results

23 RCTs met the selection criteria. Improvement in all outcomes was greater in the rehabilitation group than in the conventional care group (table). For each of the 4 main features of HRQL (dyspnoea, fatigue, emotional function, and mastery), the treatment effect was larger than the minimal clinically important difference of 0.5 on the 7 point scale (table).

Conclusion

In patients with chronic obstructive pulmonary disease, respiratory rehabilitation is more effective than conventional community care for improving health related quality of life.

COMMENTARY

COPD has emerged as a major health problem throughout the world that is likely to increase over the next decade. Not smoking remains the most important aspect of both treatment and prevention. None the less, a need exists to manage the chronic dyspnoea and limitation to functional capacity that persons with COPD have on a daily basis. The review by Lacasse *et al* describes the role of respiratory rehabilitation in addressing these issues. A high quality, systematic review of RCTs was done, and the results identify important benefits of respiratory rehabilitation on dyspnoea, HRQL, and exercise capacity.

The review takes a “global approach” to examining respiratory rehabilitation, where several types of programmes are combined in a single analysis. This approach obviously has advantages and disadvantages. One of the benefits is that an overall conclusion can be reached concerning the benefits of respiratory rehabilitation. A limitation is that the effectiveness of individual components cannot be ascertained; however, other studies have examined this issue and are referenced in the discussion of the review.

The strength of the effect should be enough to convince physicians and patients about the benefits of respiratory rehabilitation. However, access to these programmes remains a problem, and this review probably won’t convince health administrators to fund new programmes. A health economic analysis is required for such funding to occur, together with strong advocacy.

In providing clear results of a strong effect of respiratory rehabilitation in COPD, Lacasse *et al* shift the focus to how these effects can be achieved in the general community. It amazes me that as physicians we continue to prescribe expensive pharmacotherapy that is considerably less effective than respiratory rehabilitation for a disease that by definition is resistant to drug treatment, yet we can’t access respiratory rehabilitation. Perhaps every drug script should be accompanied by a letter to our local health administrator seeking improved access to respiratory rehabilitation.

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*Respiratory rehabilitation v conventional community care in chronic obstructive pulmonary disease at 6–52 weeks**

Outcomes	Number of trials (number of patients)	MCID	Weighted mean difference (95% CI)
HRQL (CRQ units)	9 (519)	0.5	1.0 (0.8 to 1.2)
Dyspnoea	8 (513)	0.5	0.9 (0.7 to 1.1)
Fatigue	8 (513)	0.5	0.9 (0.7 to 1.1)
Emotional function	8 (513)	0.5	0.7 (0.4 to 1.0)
Mastery	8 (513)	0.5	0.9 (0.7 to 1.2)
Functional exercise capacity (metres)	10 (454)	50	49 (26 to 72)
Maximum exercise capacity (watts)	14 (488)	Not reported	5.4 (0.5 to 10.2)

*CRQ = Chronic Respiratory Disease Questionnaire; HRQL = health related quality of life; MCID = minimal clinically important difference. Meta-analyses were done using random effects models. CI defined in glossary. All differences are statistically significant.

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