Pulmonary rehabilitation in interstitial lung disease patients: effects on maximum exercise capacity, anxiety and depression

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1MM Peasey, 2SS Kon, 3D Dilaver, 1JL Canavan, 1MG Ng, 1SE Jones, 1MGS Ng, 1AL Clark, 2MI Polkey, 2WDC Man. 1Harefield Pulmonary Rehabilitation Team, Royal Brompton and Harefield NHS Foundation Trust, Harefield, Middlesex, United Kingdom; 2Respiratory Biomedical Research Unit, Royal Brompton & Harefield NHS Foundation Trust, Harefield, Middlesex, United Kingdom

Background: There is increasing evidence to support the use of pulmonary rehabilitation (PR) in patients with interstitial lung disease (ILD). Several studies have shown significant improvements in six minute walk distance and health related quality of life measures, such as the Chronic Respiratory Disease Questionnaire (CRQ), following PR (Holland et al; 2008). However there is a paucity of data surrounding other outcome measures such as maximal walking exercise tests (the incremental shuttle walk: ISW) or anxiety and depression levels. As the ISW and the Hospital Anxiety and Depression scale (HAD) are commonly used outcome measures in UK PR programmes, the aim of the study was to assess the response of these outcomes to PR in the ILD population.

Methods: We analysed outcome data in 62 (30 male:32 female) consecutive ILD patients completing an 8-week outpatient PR programme. Diagnoses were idiopathic pulmonary fibrosis (n=29), connective tissue related ILD (n=8), sarcoidosis (n=14), hypersensitivity pneumonitis (n=3), asbestosis (n=4), drug induced ILD (n=4). Pre- and post-PR data was analysed using either Paired T-Tests or Wilcoxon Tests.

Results: Baseline mean (standard deviation) age was 70 (11) years, FVC 69 (22)% predicted and median (25%, 75%) MRC dyspnoea score was 4 (3, 4). There was a significant improvement in ISW (95% confidence intervals 31, 69 metres), HAD-Anxiety (95% CI –0.8, –2.4) and HAD-Depression (95% CI –0.7, –2.3). There were also significant improvements in all domains of the CRQ.

Conclusion: The ISW and HAD scores are responsive to PR in patients with ILD.

Abstract

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The Clinical COPD Questionnaire: response to pulmonary rehabilitation

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1D Dilaver, 1MM Peasey, 1AL Clark, 1MGS Ng, 1SE Jones, 1MI Polkey, 2WDC Man. 1Harefield Pulmonary Rehabilitation Team, Royal Brompton & Harefield NHS Foundation Trust, Harefield, Middlesex, United Kingdom; 2Respiratory Biomedical Research Unit, Royal Brompton & Harefield NHS Foundation Trust, Harefield, Middlesex, United Kingdom

Background: The Clinical COPD Questionnaire (CCQ) is a 10-item health status instrument which has been shown to be reliable and valid in COPD. It takes only two minutes to complete and is simple to score, ranging from 0 (best) – 6 (worst health status). A change in the total CCQ score of 0.4 or more is considered clinically significant (Kocks et al Respir Res 2006). There is a relative paucity of data assessing the responsiveness of the CCQ to pulmonary rehabilitation (PR). We hypothesised that the CCQ would be responsive to PR and that changes would correlate with changes in other well established health status instruments (Chronic Respiratory Questionnaire: CRQ, St George’s Respiratory Questionnaire: SGRQ and the COPD Assessment Test: CAT).

Methods: 75 consecutive COPD patients referred to an 8-week outpatient PR programme were recruited. The CCQ, along with the CRQ, SGRQ, CAT, and incremental shuttle walk (ISW), were measured before and after PR. Paired t-test was used to compare outcomes before and after PR, whilst Spearman’s rank correlation was used to assess association between change in CCQ with change in other health status questionnaires.

Results: 53 patients completed PR. Baseline characteristics were 33 Male:20 Female, mean (standard deviation) age 68.5 (9.9) years, FEV1% predicted 58 (27) and ISW 224 (178) metres. There was a significant reduction (improvement) in CCQ following PR (Pre: 2.9 (1.3) versus Post: 2.1 (1.2); 95% confidence interval –0.4 to –1.0). Significant improvements were also seen in ISW, CRQ domains, SGRQ and CAT with PR. Changes in CCQ correlated significantly with changes in the other health status instruments (see table 1).

Conclusion: The CCQ is responsive to PR and a practical alternative to longer-established health status instruments.