Pulmonary rehabilitation: delivery and evaluation of care

S26 BARRIERS TO ATTENDANCE AND ADHERENCE AT PULMONARY REHABILITATION

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Background Pulmonary rehabilitation (PR) is a multidisciplinary programme which has been shown to improve symptoms and exercise tolerance in patients with COPD and is recommended by national guidelines. Attendance at pulmonary rehabilitation following referral is low and many patients drop-out of the programme before completion. The aim of this study is to obtain quantitative data to assess predictors of attendance and adherence at PR.

Methods We performed a retrospective analysis of a database of patients with COPD, who had been invited to attend a pulmonary rehabilitation programme over a 5-year period. Data was obtained from 727 patients. Patients were divided into three groups based on the number of sessions attended; non-attendance (0% attendance), non-adherence (1%–63% attendance), adherence (>63% attendance). Data were compared between attenders vs non-attenders and adherers vs non-adherers to identify predictors (Gender, Smoking status, pack years, cohabitation, referral route, employment status, body mass index, forced expiratory volume in 1 s (FEV_1), FEV_1% predicted, oxygen therapy (LTOT), oxygen saturations at rest, lung information needs questionnaire*, shuttle walk distance*, previous hospitalisation and year of referral) of attendance and adherence to be identified. *Included in adherence analysis only.

Results 31.8% of patients referred for PR did not attend and a further 28.3% were non-adherent. Univariate predictors of attendance were male gender (OR=1.53 95% CI (1.05 to 2.25)), cohabitation (1.77 (1.17 to 2.67)) ex-smoker (2.29 (1.50 to 3.50)). Predictors of adherence were age (64–70: OR 1.99 (1.20 to 3.30); 71–76: 2.57 (1.48 to 4.45)) ex-smoker (4.86 (3.18 to 7.41)), FEV_1 (higher more likely), FEV_1% predicted (higher more likely), LTOT (0.54 (0.30 to 0.96)). Multiple logistic regression revealed that LTOT (OR 0.39 (0.18 to 0.84)) and cohabitation (1.84 (1.03 to 3.30)) were independent predictors of attendance. Multiple logistic regression revealed that only ex-smoker was predictive of adherence (OR 5.68 (3.33 to 9.7)).

Discussion This large quantitative study has reaffirmed previous smaller observations regarding attendance at pulmonary rehabilitation. Disease severity and lack of potential supportive partner also has a negative impact on attendance. Smoking status appears to be a strong factor in predicting attendance and adherence to sessions. Contrary to previous observations, we found no association between type of professional referring and attendance at pulmonary rehabilitation.

S27 MRC GRADE 2: IS THERE A DIFFERENCE IN ACTIVITY AND EXERCISE CAPACITY BETWEEN COPD AND HEALTHY CONTROLS?

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Introduction COPD patients are often assessed by MRC scale and comparisons made to a healthy population. MRC grade of a healthy population is not usually reported and assumed to be 1, however this may not be accurate. The characteristics of COPD individuals with MRC grade 2 aren't well defined and furthermore it has not been established if physical activity is impaired, compared to a similar healthy population.

Aim To establish if there is a difference in activity and exercise capacity between COPD individuals and healthy controls, who all have assessed themselves as MRC grade 2.

Methods We recruited 75 patients with COPD (prior to a rehabilitation intervention) and 22 healthy controls (target age 40–90 years), with a self-selected MRC of 2. They wore a SenseWear activity monitor (AM) for 12-waking hours for 2 weekdays. The AM records total energy expenditure (EE), step count and time spent above different MET levels. Demographic data were recorded, spirometry performed and participants completed 2 Incremental Shuttle Walk Tests (ISWT). Individuals with COPD completed an endurance shuttle walk test (set at 85% VO_2 peak, measured from ISWT) which is used to prescribe a walking programme, while wearing AM to determine their prescribed METS level.

Results Abstract S27 table 1 shows baseline characteristics and between group differences for COPD individuals (42 males) and healthy controls (10 males). Adjusting for baseline age, step count and ISWT remained significant, (ANCOVA, $p<0.05$). 9 (40.91%) healthy controls achieved the recommended 10 000 steps/day compared to only 6 (8.0%) COPD individuals. Although COPD individuals achieved more than 30 min of recommended moderate activity daily, they only achieved 24.07 (36.11) min of activity at an intensity above their individually prescribed METS level.

Abstract S27 Table 1 Baseline characteristics, exercise capacity and physical activity for COPD subjects and healthy controls

	COPD mean (SD)	Healthy controls mean (SD)	p Value
Age (years)	67.93 (9.41)	61.91 (10.17)	<0.05
BMI	27.16 (4.98)	28.24 (4.10)	NS
FEV_1 (l)	1.58 (0.56)	2.71 (0.69)	<0.00
FEV_1/FVC (%)	51.52 (12.09)	78.34 (5.50)	<0.00
Prescribed METS level	4.31 (0.81)	-	N/A
Best ISWT (m)	421.73 (131.94)	642.38 (164.53)	<0.01
Total EE (Kcals)	1480.76 (435.36)	1638.27 (477.72)	NS
Step count	6062.13 (3292.81)	9075.57 (4158.29)	<0.01
Sedentary activity (<3 METS, mins)	638.88 (88.43)	616.45 (65.26)	NS
Moderate activity (3–6 METS, mins)	73.48 (62.12)	100.23 (60.81)	0.078
Vigorous activity (6–9 METS, mins)	3.53 (16.10)	2.48 (7.59)	NS

Conclusions Exercise capacity and physical activity were significantly reduced in those with COPD compared to those with no respiratory disease, despite both groups categorising themselves as equally functionally limited on the MRC scale. This highlights the importance of interventions to increase physical performance for COPD individuals, especially for those who would not normally be referred to activity/exercise promotion schemes. Early intervention may help prevent the downward disability spiral commonly seen within respiratory disease and reduce functional decline.

S28 IS A PULMONARY REHABILITATION PROGRAMME FOR PATIENTS UNDERGOING CURATIVE LUNG CANCER SURGERY FEASIBLE?

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Introduction and objectives The new BTS lung cancer surgery guidelines mention patient optimisation to reduce risk. Our aim was to develop a multi-stranded pragmatic rehabilitation programme for this group of patients, apply it in a pilot study and look at