Abstract P230 Table 1

Age (gender)	Relevant co-morbidities	CPET findings	Pre-trial questionnaire scores	Post-trial questionnaire scores
17 (F)	Asthma	Pre-test hyperventilation which resolved on exercise	NQ = 7, SEBQ = 5	To be completed
73 (F)	None	Mixed dysfunctional breathing and hyperventilation	NQ = 13, SEBQ = 21	To be completed
57 (M)	None	Normal	NQ = 18, SEBQ = 11	NQ = 19, SEBQ = 6
77 (F)	Asthma	Mixed dysfunctional breathing and hyperventilation	NQ = 20, SEBQ = 20	NQ = 21, SEBQ = 15
36 (F)	Fibromyalgia, Anxiety	Pre-test hyperventilation which partially resolved on exercise	NQ = 39, SEBQ = 44	NQ = 32, SEBQ = 27
25 (M)	Asthma	Mixed dysfunctional breathing and hyperventilation	NQ = 42, SEBQ = 69	To be completed
20 (F)	Asthma	Pre-test hyperventilation which resolved on exercise	NQ = 34, SEBQ = 64	To be completed
59 (F)	None	Mixed dysfunctional breathing and hyperventilation	NQ = 16, SEBQ = 21	NQ = 7, SEBQ = 9
75 (F)	Pulmonary embolism, Anxiety	Hyperventilation	NQ = 27, SEBQ = 19	NQ = 18, SEBQ = 9
62 (F)	Asthma	Normal	NQ = 39, SEBQ = 48	NQ = 30, SEBQ = 24
68 (F)	None	Normal	NQ = 19, SEBQ = 31	To be completed
63 (M)	Pulmonary fibrosis	Hyperventilation	To be completed	To be completed
26 (F)	Fibromyalgia, Anxiety	Mixed dysfunctional breathing and hyperventilation	To be completed	To be completed
25 (M)	Respiratory arrest, Asthma	Mixed dysfunctional breathing and hyperventilation	To be completed	To be completed

Mean [SD]

REFERENCE

- 1 Stanton AE, Vaughn P, Carter R, Bucknall CE. An observational investigation of dysfunctional breathing and breathing control therapy in a problem asthma clinic. *Journal of Asthma* 2008;**45**(9):758–765.

P231 BREATHING PATTERN DISORDERS IN A COMPLEX BREATHLESSNESS SERVICE; CLASSIFICATION AND CLINICAL CHARACTERISTICS

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Background and aim Many patients presenting to our complex breathlessness service appear to have breathing pattern disorders (BPDs). When suspected clinically, they are referred to a specialist respiratory physiotherapist for assessment and treatment. Here we describe the prevalence of identifiable breathing patterns and their clinical characteristics

Methodology We performed a retrospective review of our clinical database including patients seen for initial physiotherapy assessment between December 2015 and June 2016. Patients underwent a standardised diagnostic assessment (clinical history, physiotherapy assessment, lung function and Nijmegen questionnaire).

Results Data from 43 patients with confirmed BPD were included, 77% female, mean age 58 yrs. Relevant respiratory comorbidities included chronic cough (33%), asthma (30%) and vocal cord dysfunction (30%), with no comorbidity in 23%. Other associated conditions included musculoskeletal conditions (47%), chronic pain (44%), obesity (44%), nasal blockage (42%) and anxiety (31%). Four categories of breathing patterns were identified: thoracic dominant (58%), irregular/crescendo (51%), forced abdominal expiration (30%), and thoraco-abdominal asynchrony (2%). More than one BPD was seen in 35% of patients; only forced abdominal expiration and thoracic dominant didn't co-exist. Conversely all pattern types could be found in isolation, although irregular/crescendo was more likely to co-exist with another pattern type.

Conclusion Four separate breathing pattern types were identified, in isolation or in combination. Although anxiety was fairly common, many other associated disease and conditions were seen, especially relating to biomechanical factors. This preliminary data may enable clinicians to identify breathing pattern types, lead to the development of targeted treatment options and promote screening of particular conditions associated with BPD.

P232 DOES ONE MODEL OF PULMONARY REHABILITATION FIT ALL? A MODIFIED APPROACH TO PULMONARY REHABILITATION

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Introduction and objectives Pulmonary Rehabilitation (PR) is defined as a multidisciplinary programme for patients with chronic respiratory impairment that is individually tailored and designed to optimise each patient's physical and social performance and autonomy (NICE, 2010). Our service was involved in RCP PR Pilot Accreditation Scheme.

Individuals MRC 2–5, functionally limited by breathlessness are referred to PR (BTS, 2013). There is a wide spread of functional disability and breathlessness for these individuals. Does one approach to PR address the needs of all patients within these broad groupings?

Aims Modifying PR may improve attendance and completion of full PR for patients MRC5.

Methods Following service review, Modified Programme was offered; 2 × Gym Sessions and education. Session one; patients difficulties were discussed. Breathing control techniques, improved posture and lung inflation were demonstrated. Daily home exercises were promoted. Following 2 weeks of homework, the patients were invited to a review. Any improvement in breathlessness and confidence was discussed with the patients offered Full PR where appropriate.

Abstract P232 Table 1 Outcomes

Time Period:	MRC5 Patients Referred:	MRC5 Patients Recruited:	No. recruited to Full PR:	Completion of Full PR:	Attendance at all 4 Education Sessions:
Apr 15-Oct 15: (7 months)	11	6 (54%)	0 (0%)	0 (0%)	2 (33%)
Nov 15-Mar 16: (5 months)	14	9 (64%)	6 (67%)	5 (55%) (1 declined offer)	4 (44%)

The patient who did not complete full programme continued to attend education. 1 patient attended the first session with no further engagement. 1 patient deferred until June 2016. Qualitative data reports significant benefit.

This modified approach was observed during the RCP site visit. Feedback included the need for feedback to the BTS with regards to greater flexibility with the standards and their future developments as a consequence of observing our modified approach to PR.

What Next? Modification to standard PR offers significant improvement in attendance and completion of PR for patient with significant dyspnoea (MRC5). Could these results be replicated within other PR service?

We continue to offer modified PR and now include MRC4 patients with significant co-morbidities which would otherwise restrict attendance.

REFERENCES

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P233

A PILOT DIAGNOSTIC CARDIO-RESPIRATORY BREATHLESSNESS CLINIC: CAN A SYMPTOM-BASED APPROACH ACHIEVE AN EARLIER DIAGNOSIS?

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Introduction We aimed to compare the time to diagnosis and treatment between a combined cardio-respiratory diagnostic breathlessness clinic (BC) and usual specialist outpatient care (UC) in patients with chronic breathlessness referred from primary care.

Methods We surveyed patients with undifferentiated chronic breathlessness referred to secondary care outpatient cardiology and respiratory services during March 2015 (UC). Subsequently, we implemented a fortnightly pilot breathlessness clinic (BC) between August 2015 and January 2016 using existing referrals to either cardiology or respiratory specialties. Patients were seen by either a consultant cardiologist or respiratory physician, reviewed by a physiotherapist, and discussed by the MDT at the end of clinic.

Abstract P233 Table 1 Results of a survey of usual specialist outpatient care (UC) versus a combined cardio-respiratory breathlessness clinic (BC)

	Usual care	Breathlessness clinic
Number	38	54
Age (yrs)	67 [15]	66 [17]
Gender	50% male	42% male
Time to be seen (weeks)	13 [8]	5 [3]
Time to diagnosis (weeks)	16 [7]	5 [8]
Time to physiotherapy (weeks)	19 [13]	1 [1]
% discharged after single follow up	35%	87%
Did Not Attend	18%	4%
Diagnoses (n)	COPD: 9 ILD: 6 Asthma: 5 Dysfunctional breathing: 4 Bronchiectasis: 3 OSA: 2 Bronchitis: 2 Other (respiratory): 4 Other (cardiology): 3	COPD: 8 ILD: 4 Asthma: 8 Dysfunctional breathing: 11 Bronchiectasis: 2 OSA: 1 Obesity and physical de-conditioning: 7 Heart Failure: 7 Arrhythmia: 2 Valvular heart disease: 3 Musculoskeletal chest pain: 1

The investigations performed in primary care were documented and where needed the following investigations were completed for the BC: haemoglobin, brain natriuretic peptide, spirometry, electrocardiogram, chest radiograph, Nijmegen questionnaire, screening for anxiety and depression symptoms and a physical activity questionnaire. Time to diagnosis, physiotherapy, treatment and discharge were measured and compared with UC. Patients were requested to complete a patient experience questionnaire.

Results Table 1 shows the results of UC compared to the BC. 35% of referrals from primary care reported ≤ 1 investigation and only 28% had had spirometry performed. The MRC dyspnea scale grade distribution in the BC was MRC1 = 4%, MRC2 = 30%, MRC3 = 37%, MRC4 = 22%, MRC5 = 7%. Co-morbidity was common with over >80% of patients having at least two diagnoses contributing to their breathlessness. Dysfunctional breathing was the commonest primary and secondary diagnosis.

18.5% of patients in the BC could have been diagnosed in primary care. 18.5% were originally referred to the incorrect specialty and in nearly 30% of patients referrals to the other specialty were potentially avoided due to the MDT discussion. Only one third of patients required specialist tests to secure their diagnosis. All patients rated their experience as 'excellent'.

Conclusions Our pilot diagnostic breathlessness clinic reduced time to diagnosis and treatment, and avoided further between-specialty outpatient appointments. However, our results demonstrate the need for symptom-based breathlessness pathways starting in primary care to utilise simple investigations prior to referral to specialist clinics.

REFERENCE

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