

Advice Note on Dysfunctional Breathing in Asthma

(For use in a fully assessed and monitored patient as part of a difficult asthma service)

A key feature of asthma is dyspnoea, the symptom that may cause many patients to be referred for physiotherapy assessment.

Dysfunctional breathing disorders have been described in people with asthma and asthma-like symptoms.(1) Vocal cord disorders and dysfunction in patients with diagnosed asthma and those with ‘asthma like’ symptoms have been reported as a cause of respiratory symptoms including wheeze, chest tightness and dyspnoea.(2) Symptomatic hyperventilation has been implicated as a factor in apparent steroid resistant asthma(3) and may complicate severe and brittle asthma.(4) Patients with asthma-like symptoms but lacking objective evidence of asthma may hyperventilate when provoked by psychological or physiological stress (5,6) Dysfunctional breathing may, however, be responsive to interventions directed at breathing retraining; improvements have been reported in clinical series(7,8,9) and in a randomised controlled trial.(1)

Techniques generally centre on manipulating the respiratory pattern to reduce respiratory rate and/or tidal volume and therefore reduce hyperventilation and improve breathing pattern. The physiotherapist has a choice of treatment modalities available, many of which have been in use for a considerable period of time. Dyspnoeic patients are treated on an individual basis, with the therapist continuously altering treatment components in response to patient feedback.

Breathing exercises in asthma

A 2000 systematic review of breathing techniques (10) concluded that too few studies had been carried out to warrant firm judgments, but that collectively the data implied that physiotherapeutic breathing techniques may have some potential benefit.

Three large RCTs have since been completed.(11-13) A 2007 RCT(11) demonstrated that breathing retraining and relaxation (termed the Papworth method) significantly reduced respiratory symptoms and improved health-related quality of life in a cohort of patients with asthma. A 2008 RCT (12) adds further strong support to this work, also finding significant reductions in asthma symptoms. The most recent RCT (13) controlled for placebo effect by offering the control group exactly the same time with a healthcare professional—that is, an experienced respiratory nurse providing asthma education. There were significant improvements in asthma-related quality of life in both groups after 1 month, but at 6 months a large difference between groups was found, in favour of breathing exercises, in asthma quality of life, anxiety and depression, Nijmegen score and a trend for an improvement in asthma control. No effect on airway inflammation was found. Monitoring of the effect of treatment is important, as is the understanding that this form of therapy does not replace usual medical care.

Recognising dysfunctional breathing

- Consider this in patients with difficult asthma who have disproportionate/persisting symptoms of breathlessness where peak flow monitoring and pulmonary function testing do not support the degree of reported symptoms
- Consider where patients are on optimal medical therapy and symptoms persist
- Consider use of Nijmegen questionnaire. It should be recognised that whilst the questionnaire identifies characteristic symptom patterns, it cannot be regarded as a definitive diagnostic test since it was not developed in patients with asthma and there is some overlap of asthma and dysfunctional breathing symptoms.

Treatment plan (delivered by specialist respiratory physiotherapist):

- Where over-breathing is a component of the manifestation of asthma symptoms, the focus should be on breathing exercises that maximise conscious control of nose breathing, aim to decrease ventilation, particularly inspiration, and ‘re-establish a more normal and slower pattern of movement
- The Papworth method of breathing exercises should be used. This incorporates breathing awareness, reducing respiratory rate and/or tidal volume, end expiratory pause and also relaxation training where appropriate,
- Patients should be advised that breathing strategies are adjunctive to, not replacement therapy for, medication.

Assessment:

Measure Asthma symptom score (ACS or ACT) Nijmegen score and mAQLQ at start and finish of treatment period. The clinically significant difference in ACS and mAQLQ is 0.5; no data exists on the clinically significant difference for Nijmegen score.

References

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