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INTERPRETING THE LANGUAGE OF BREATHLESSNESS

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Janelle Yorke and Anne-Marie Russell discuss the sensation of breathlessness and the language used by patients and healthcare professionals to describe it.

Breathing can be compared with walking; you are usually unaware of it. If you walk around the block, you do so at your own pace unless, for example, you’re late for a bus and decide to try to catch it – you have to think about your pace and make a conscious decision to speed up. Depending on your level of fitness, this may be an unpleasant experience as your rate of breathing may increase. If you catch the bus and take a seat, the walk ends and you can rest. Unlike walking, you cannot take a rest from breathing, no matter how difficult it is, or how breathless or tired you become.

Healthcare professionals need to understand the types (or ‘quality’) and characteristics of breathlessness to help determine its aetiology. In addition, they need to have an understanding of the effects it, and any medical interventions to manage it, have on patients’ physical and emotional well-being. Different words or phrases are often used to describe the sensation.

Breathlessness and differential diagnosis

The medical term for breathlessness is dyspnoea, derived from the Greek words ‘dys’ meaning ‘bad’ or ‘difficult’ and ‘pnoia’ meaning ‘breathing’. The American Thoracic Society (1999) defines dyspnoea as ‘a term used to characterise a subjective experience of breathing discomfort that consists of qualitatively distinct sensations that vary in intensity’. Breathlessness is a powerful diagnostic symptom and often results in patients seeking help from a healthcare professional.

It is the responsibility of healthcare professionals to determine the cause of a patient’s subjective experience of breathlessness and provide them with appropriate management strategies. This is

often challenging as the diagnosis may involve a number of factors, such as those listed in Tables 1 and 2.

Given that there are multiple causes of breathlessness, investigations should begin with a full history prior to examining a patient. The patient’s perception of events preceding the problem of breathlessness will help to determine whether the problem is acute or chronic and help the healthcare professional generate a potential diagnosis.

The medical definition of a diagnosis is ‘a statement of the nature and cause of the patient’s problem, sufficient to make an accurate prognosis and plan rational treatment’ (Pendleton et al, 1984). Therefore, in order to provide effective symptomatic relief, the range of probable causes of breathlessness must be considered.

The descriptors used by a patient can give some

TABLE 1. CAUSES OF ACUTE BREATHLESSNESS

Cardiac causes	<ul style="list-style-type: none"> ● Acute myocardial infarct ● Arrhythmia ● Pericarditis and pericardial effusion ● Severe pulmonary oedema ● Acute left ventricular failure
Pulmonary causes	<ul style="list-style-type: none"> ● Exacerbation of asthma ● Exacerbation of COPD ● Pnuemonia ● Pneumothorax ● Pulmonary embolism ● Large airway obstruction, such as anaphylaxis, foreign body, bronchial carcinoma and epiglottitis
Other causes	<ul style="list-style-type: none"> ● Altitude illness ● Anxiety/hyperventilation ● Diabetic ketoacidosis ● Hypovolaemic shock ● Thyrotoxicosis ● Trauma, for example to larynx ● Side-effects of medication, such as aspirin, beta-blocker ● Pain

insight into potential differential diagnosis. The qualitative sensation (or 'type') of breathlessness and the language used to describe it appear to differ, depending upon the underlying disease (Mahler et al, 1996). Interpreting the language of breathlessness and the use of 'quality descriptors' can, therefore, assist not only in formulating a working diagnosis, but also in monitoring a patient's clinical condition and response to treatment (Moy et al, 1998). In addition to 'quality descriptors', the affective (or emotional) aspect of breathlessness will be considered in this article.

Language

Language is more than a verbal exchange; it is the interface between the healthcare professional and the patient. It occurs on different levels and is influenced by health beliefs (Becker and Maiman, 1975), social factors (Acheson, 1998), psychological well-being (Balint, 1957), personalities and behaviour (Pendleton et al, 1984). Having an appreciation of these concepts will help healthcare professionals to understand the language of breathlessness.

TABLE 2. CAUSES OF CHRONIC BREATHLESSNESS

Cardiac causes	<ul style="list-style-type: none"> ● Left ventricular disease ● Congestive cardiac failure ● Valve disease (mitral and aortic stenosis) ● Arrhythmias ● Pericardial disease
Pulmonary causes	<ul style="list-style-type: none"> ● Asthma ● COPD ● Fibrotic lung disease ● Pleural effusion ● Emphysema ● Primary or secondary lung malignancy ● Bronchiectasis
Other causes	<ul style="list-style-type: none"> ● Severe anaemia ● Psychogenic, for example anxiety ● Neuromuscular causes, such as myasthenia gravis, Guillain-Barré syndrome ● Thromboembolic disease ● Thyroid disease ● Obesity ● Hiatus hernia (large)

Multidimensional breathlessness

Sensations of respiratory discomfort have much in common with pain; both are highly subjective and can only truly be described and interpreted by the person experiencing the sensation (Yorke, 2008). This is an important point to bear in mind when assessing a patient who is breathless as objective lung function measures, such as forced expired volume in one minute (FEV₁) and peak flow measures (PEF), have been found to correlate poorly with patients' own reports of the severity of breathlessness and its effect on quality of life.

Another similarity between breathlessness and pain is they both are multidimensional, including intensity, qualities (or type) and affect (or emotion).

Breathlessness intensity

Intensity of breathlessness is the most commonly used measure of disease severity and response to different treatments. Measurements are usually made with the visual analogue scale (VAS) ranging from 0 ('no breathlessness') to 10 or 100 ('worst breathlessness imaginable'). However, measuring intensity tells us nothing about the type of breathlessness or related distress. This can be contrasted with the experience of a patient presenting with abdominal or chest pain. Invariably, the quality of the pain would be assessed – is it 'cramping', 'burning', or 'sharp'? These descriptors, among others, are used because they offer a common language with which the cause of the problem can often be identified.

Breathlessness quality

Just like the language developed to describe the sensation of pain, a common language for breathlessness quality has emerged. A number of phrases are used to describe the quality of breathlessness, for example 'air hunger', 'effort' or 'work' and 'chest tightness' (Elliot et al, 1991; Simon et al, 1990). The sensation of 'air hunger' is associated with hypercapnia (abnormal amounts of CO₂ in the circulating blood). It is compared with the feeling experienced after holding a breath for a long time and is often described as 'not getting enough air' or 'uncomfortable urge to breathe'. With patients who are chronically ill, an increased sense of air hunger may indicate CO₂ retention that requires further investigation.

The sensation of increased 'effort' or 'work' of breathing occurs when a patient has to work harder to maintain adequate ventilation. The sensation of increased 'work' of breathing is often experienced with COPD and is related to lung hyperinflation and a change in the structure of the

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chest wall and chest-wall muscle weakness.

During an acute exacerbation of COPD, a patient will often describe a combined sensation of air hunger and increased work of breathing. The sensation of ‘chest tightness’ occurs during episodes of bronchoconstriction and is fairly specific to asthma. Therefore, quality descriptors may be beneficial in tracking patients’ clinical condition and response to therapy. Important questions to ask patients when assessing a change in their clinical condition should include an alteration in the work or effort of breathing, the urgency to breathe and the presence of any feelings of chest tightness.

There has been some interest in the association between these descriptors of breathlessness quality and underlying disease but, unlike with pain, the relationship between descriptors and underlying disease is not as convincing.

A question often asked by nurses who are caring for those patients with a dual diagnosis of COPD and chronic heart failure is ‘when the patient presents with shortness of breath, how do we know which disease is causing it?’ In any patient assessment, it is important not to focus on one

aspect of the problem. In addition to a patient’s description of their breathlessness quality, other signs and symptoms need to be considered; for example: does the patient have swollen ankles, has the patient’s weight changed, is there an audible wheeze?

Although a number of breathlessness descriptors are shared between patients with COPD and those with chronic heart failure, some are also unique. Table 3 summarises the results of studies that have asked patients with a diagnosis of either COPD or chronic heart failure to select items from a list of breathlessness descriptors. As evident in the table, the descriptors ‘work’/‘effort’, ‘air hunger’ and ‘tight chest’ are common to both disease states, making a diagnosis based solely on these descriptions of breathlessness difficult.

Breathlessness descriptors and culture

Few studies have attempted to examine the effect of race or culture on the selection of descriptive phrases. Hardie et al (2000) conducted a study to determine whether patients who were African-American or white and had asthma used different

TABLE 3. ASSOCIATIONS BETWEEN COPD AND CHRONIC HEART FAILURE (CHF) AND BREATHLESSNESS DESCRIPTORS

Study	Disease and sample size	Rapid	Inhalation (breath does not go in all the way)	Exhalation (breath does not go out all the way)	Work/effort	Hunger	Heavy	Tight chest
Simon et al (1990)	COPD (n=16) CHF (n=5)	X			X	X		
Mahler et al (1996)	COPD (n=85) CHF (n=17)		X	X	X			
Wilcock et al (2002)	COPD (n=34) CHF (n=30)				X	X	X	X
Caroci and Lareau (2004)	COPD (n=30) CHF (n=30)				X	X		

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BOX 1. KEY POINTS

- **Breathlessness has numerous causes**
- **Assessment of breathlessness is essential to identify the cause and inform the treatment plan**
- **A patient's interpretation of the quality and emotional aspects of breathlessness are important for effective clinical management**

words to describe their breathlessness. The study found that patients who were African-American used upper-airway descriptors ('tight throat', 'voice tight', and 'itchy throat') and patients who were white used lower-airway descriptors ('deep breath' and 'out of air'). These results highlight the importance of language when assessing breathlessness and raise awareness that ethnic differences exist in the perception and description of breathlessness.

The emotive aspect of breathlessness

The 'unpleasantness' or emotive aspect of breathlessness is an important aspect of patient assessment because it evokes distress and changes behaviour. Despite the high prevalence of panic and anxiety experienced by patients with respiratory disease (Smoller et al, 1999), there is a relative paucity of work relating to patients' affective experience and descriptions of breathlessness. When asked to describe the experience of being breathless, patients provide a range of emotive descriptions such as 'scared', 'irritating', and 'depressed' (Bailey, 2004; Hardie et al, 2000). These studies highlight that affect is an important aspect of the breathlessness experience and that patients can generate appropriate language to describe it.

The value of assessing patients' emotive responses and descriptions is that it may provide insights into why some patients report a higher or lower level of breathlessness severity relative to their objective lung function measures and compared with other patients who have a similar disease status. For example, some patients may not be 'bothered' or 'irritated' by their breathlessness. These patients may be at risk of not seeking appropriate treatment, as may be the case in near-fatal and fatal asthma. Likewise, the severity and frequency of acute exacerbations in chronic respiratory disease may depend on a patient's emotional interpretation of breathlessness. A holistic assessment that includes affect will provide a clinician not only with a

greater understanding of a patient's current situation but also their possible future treatment.

Such treatments may include cognitive behavioural therapy, relaxation and breathing techniques, and pulmonary rehabilitation. In particular, self-management is a common expectation of those patients who have chronic disease. Successful self-management relies on a patient's appropriate perception of, and reaction to, their symptoms.

Assessing breathlessness quality and affective aspects

The most frequently used measure of breathlessness is its intensity using a VAS. Other questionnaires that attempt to capture and measure the experience of breathlessness are not specific to the symptom but measure associated quality of life with chronic respiratory disease (Jones et al, 1992).

Researchers are currently developing a new questionnaire called Dyspnoea-15 (Yorke et al, 2007), which captures the quality and affective aspects of breathlessness. Dyspnoea-15 consists of 15 items that were derived from a list of 81 breathlessness descriptors located in the literature. The final 15-item lists contains nine items that relate to quality and six that relate to affect.

The value of this questionnaire is that it can be used in a variety of clinical settings and in various disease states where breathlessness is an issue. Importantly, Dyspnoea-15 will provide clinicians with a valid measure of different aspects of breathlessness that will enable the benefit of different treatments to be assessed.

Conclusion

Breathlessness is often multifactorial and may be attributable to several overlapping causes. The importance of clinical assessment skills and history-taking cannot be underestimated. Communication is integral to an effective assessment and examination, both to gather information and to give information, particularly in relation to treatment plans. For patients who are breathless, the interpretation of language expressed for both quality and affective aspects of breathlessness will contribute significantly to the clinical management of their condition. ■

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