



BREATHLESSNESS IN COPD

Breathlessness is a distressing condition, caused by numerous respiratory diseases, cardiovascular diseases including heart failure, renal disease and cancer. It is one of the most common symptoms in the last years of life and is associated with poorer outcomes. Breathless patients experience a sense of 'needing more air'. People who are breathless often experience anxiety and distress and feelings of panic, leading to further breathlessness.

Breathlessness is the main symptom of chronic obstructive pulmonary disease (COPD), a progressive lung disease characterised by emphysema and chronic bronchitis. Over 80% of patients with COPD experience some degree of breathlessness. Chronic breathlessness in COPD is a predictor of mortality and is associated with severe disability. Breathlessness in COPD impacts significantly on quality of life, mental health and functional status, and may be associated with anxiety and depression. Breathlessness in people diagnosed with COPD may be a sign of a flare-up or an infection.

Features of breathlessness

Breathlessness has been defined as "a subjective experience of breathing discomfort that consists of qualitatively distinct sensations that vary in intensity. The experience derives from interactions among multiple physiological, psychological, social, and environmental factors, and may induce secondary physiological and behavioural responses." The term is used interchangeably with dyspnoea, shortness of breath (SOB), breathing difficulty and laboured breathing.

Common signs and symptoms of breathlessness include apical (upper chest and neck) breathing, higher ratio of inspiratory to expiratory length, absence of end-respiratory pause, and frequent sighs and yawns. The sense of needing more air may lead to an increase in tidal volume (amount of air in each breath) or respiratory rate, and breathing predominantly using the upper chest and accessory muscles. Apical breathing causes reliance on accessory neck muscles of respiration and underutilisation of diaphragmatic muscle, further increasing the work of breathing and intensifying breathlessness. Accessory muscles of respiration are easily fatigable, whereas diaphragmatic muscle is efficient and relatively fatigue-resistant.

Anxiety and depression caused by breathlessness can further increase the perception of breathlessness. Anxiety increases respiratory rate and can cause muscle tension, further increasing the work of breathing and respiratory demand.

As breathlessness is so unpleasant, it is only natural to reduce activity to avoid it. However, this inactivity leads to self-isolation and respiratory muscle deconditioning. This worsens breathlessness further.

Management

Symptomatic treatment with drug and non-drug interventions is often required, in addition to optimally treating the underlying disease. For the treatment of COPD, optimal treatment involves use of a single inhaler dual long-acting bronchodilators plus an inhaled corticosteroid in patients with frequent exacerbations. Short-acting bronchodilators (salbutamol, ipratropium) are used for relief of breathlessness rather than regular use.

Oxygen therapy reverses hypoxaemia (reduced oxygen pressure in the blood) but does not improve breathlessness in daily life and has no benefit on health-related quality of life.

Benzodiazepines and other anti-anxiety medications do not improve breathlessness.

Morphine

Low-dose (<30mg/day) oral morphine may be beneficial for chronic refractory dyspnoea in people with severe and advanced COPD. People with more severe breathlessness are more likely to benefit from low-dose morphine. Respiratory depression is unlikely at these doses.

In a trial of low dose oral morphine (10mg twice daily for 4 weeks), morphine reduced the sensation of breathlessness but led to minimal improvement in quality of life in patients with moderate to very severe chronic breathlessness. Another small Australian randomised controlled trial found no difference between 20mg daily controlled release morphine and placebo in reduction of breathlessness at 1 week. There was also no difference in the intensity of breathlessness, functional status, health-related quality of life.

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Sustained release morphine sulfate capsules (Kapanol) are subsidised on the PBS for symptomatic relief of chronic breathlessness in patients receiving palliative care. When used for this indication, immediate release oral morphine must not be co-prescribed. Concomitant use of laxatives is necessary to reduce the risk of opioid-induced constipation.

Pulmonary rehabilitation

There is strong evidence that pulmonary rehabilitation, involving exercise, education and support over many weeks, leads to a clinically significant reduction in breathlessness, as well as substantial improvement in fatigue, emotional functioning and quality of life. Pulmonary rehabilitation can provide residents with a sense of control over their condition. Smoking cessation should be supported in people with COPD.

The Breathing, Thinking, Functioning (BTF) clinical model recognises three components of reaction to breathlessness. Breathlessness causes dysfunctional breathing patterns with an increased respiratory rate, the need for use of accessory muscles and hyperinflation of the lungs, leading to inefficient breathing and increased work associated with breathing. Within the thinking domain, misconceptions and paying too much attention to the sensation of breathlessness such as memories of past or negative experiences lead to anxiety, distress, feelings of panic and thoughts about dying. People experiencing breathlessness often reduce their physical activity, leading to self-isolation and the need for more help from others, and also leading to deconditioning of limb, chest wall and accessory muscles.

Addressing these reactions to breathlessness is an important part of a symptom management approach to breathlessness:

Breathing

- Breathing techniques
- Handheld fan
- Airway clearance techniques
- Inspiratory muscle training
- Chest wall vibration
- Non-invasive ventilation

Thinking

- Cognitive behavioural therapy
- Relaxation techniques
- Mindfulness
- Acupuncture

Functioning

- Pulmonary rehabilitation
- Activity promotion
- Walking aids
- Pacing
- Neuromuscular electrical stimulation

Breathing and relaxation techniques such as 'pursed-lip breathing' and abdominal breathing are beneficial. Physiotherapists and breathlessness services can focus on airway clearance and cough minimisation techniques, pacing and fatigue management. A hand-held battery-operated fan positioned across the lower part of the face can help control breathlessness. Lung Foundation Australia sells hand-held fans at a low cost.

The thinking domain can be targeted by distraction techniques, psychological support and anxiety management. Cognitive behavioural therapy (CBT) improves breathlessness as well as anxiety and depression.

Exercise programs and advice of activity management and energy conservation strategies support improved function and activity.

Summary

For people with COPD, breathlessness is burdensome and distressing, leading to a cycle of physical deconditioning and increased anxiety and depression. Both pharmacological and non-pharmacological interventions are necessary to reduce stress, improve quality of life and function. Low-dose sustained release morphine may be beneficial, however benzodiazepines are not effective. Multiple interventions through pulmonary rehabilitation are required to palliate breathlessness effectively. It is always important to explore the resident's lived experience of chronic breathlessness associated with COPD.

References

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