

Care Management Guidelines
Breathlessness

Breathlessness

Introduction

- This guideline considers the sensation of breathlessness and outlines symptomatic management measures in the palliative care setting.
- Whilst investigation and definitive active treatment of underlying disease should always be considered and may be essential management, in-depth details are not given here.

Key Principles

- Breathlessness is:
 - Subjective;
 - Not always related to underlying disease severity:
 - Measures of lung function generally do not correlate well with the sensation or severity of breathlessness.
 - Hypoxia *per se* does not mean breathlessness.
 - Frequently associated with anxiety which may be a major component; and
 - A complex perception (and the reaction to that perception) influenced by physiological, psychological and environmental factors.
- It is necessary to identify the causal components of the symptom of breathlessness, namely the patho-physiological mechanism and psychological response. “[*dyspnoea*] might be more comprehensively viewed as a nociceptive phenomenon like pain, with motivational and affective dimensions expressed as distress...in addition to the sensory dimension.” (Steele and Shaver 1992)
- Use non-pharmacological and pharmacological measures to reduce breathlessness and its perception.
- Assess and manage psychological factors.
- Establish that reversible causes of breathlessness are managed optimally according to the defined goals of care.
- Consider active treatment of:
 - infection;
 - pleural effusions;
 - pneumothorax;
 - pulmonary embolus;
 - reversible airways obstruction;
 - anaemia; or
 - impaired cardiac function.
- In the setting of cancer:
 - upper airways obstruction (suspect if stridor is present); or
 - acute superior vena cava obstruction (suspect if facial swelling or distension of upper body veins).

Useful Questions When Assessing Breathlessness

Onset

- Has it come on suddenly or is has it been long term? Sudden onset can be due to acute causes e.g. pulmonary embolus, bronchial obstruction.
- Is it associated with stridor or signs of superior vena cava obstruction (facial swelling or distension of upper body veins)?
- Is the person in the terminal phase?

Provoking/relieving

- Does it occur at rest?
- What brings it on - exertion/ position/ environmental factors?
- What non-drug measures are being used and do they help?
- What medications are being used and what effect do they have on the breathlessness?
- If oxygen is being used, does it help the sensation of breathlessness or otherwise make the patient better?
- Are there other symptoms causing discomfort?

Quality

- What does it feel like? Verbal descriptors can be illustrative e.g.:
- "I feel out of breath."
- "I cannot get enough air."
- "I cannot take a deep breath."
- "My breathing is shallow."
- "My breath does not go all the way out."
- "My breathing is heavy."
- "My chest feels tight."
- "My breathing requires more work/effort."
- "I feel too tired to breathe."
- "I feel that I am suffocating."
- "I feel that my breathing is rapid."
- "I am gasping for breath."

Severity

- How bothered is the person by their breathlessness? At best? At worst? On average?
- On a scale of 0 (not at all breathless) – 10 (worst imaginable breathlessness), how does the person rate their breathing sensation over the past 24 hrs?
- Exercise tolerance: how much exertion can the person do before becoming short of breath?

Understanding

- What is your understanding of your breathlessness and its causes?
- What does your breathlessness mean to you and your family?
- What is your goal for this symptom?

Diagnosis

Possible causes of dyspnoea and specific management

(Adapted from Fraser Health 2006)

Underlying Causes	Treatment of Choice
Airway obstruction: Large airway/ bronchial obstruction	Radiotherapy/steroids/stenting
Anaemia – severe haemoglobin < 8gm/dl	Transfusion may be indicated, especially if due to blood loss
Anxiety	Non-pharmacological interventions, pharmacological interventions
Chronic Obstructive Pulmonary Disease (COPD) Small airway obstruction Asthma	Conventional inhalers/ nebulizers/ steroids/ anticholinergic agents Note: many smokers live with undiagnosed and untreated COPD, which exacerbates malignancy-related dyspnoea
Congestive Heart Failure Coronary Artery Disease Arrhythmias	Treat with specific cardiac medications: Diuretics, digoxin, beta-blockers, anti-arrhythmic
Effusions: Pleural Pericardial Peritoneal	Drain if clinically significant cause of the patient's dyspnoea Pleuradesis or indwelling pleural catheter for recurrent pleural effusion Pericardial window Paracentesis if large volume
Fatigue/deconditioning, weakness	Activity to tolerance, pulmonary rehabilitation exercises may be helpful
Lung damage as a result of cancer treatment	Consult medical oncologist, radiation oncologist Steroids may be indicated for radiation pneumonitis
Infection: usually bronchitis or pneumonia	Specific antibiotics as appropriate
Lymphangitis carcinomatosa	Corticosteroids, diuretics, humidified oxygen
Neuromuscular e.g. Motor Neurone Disease (MND)	No specific therapy - apply the non-pharmacological and pharmacological suggestions outlined in the guideline For MND patients – BiPAP if appropriate
Pulmonary emboli	Anti-coagulation, inferior vena cava filter if appropriate
Pain	Exacerbates dyspnoea – appropriate analgesia
Primary or metastatic tumour effects e.g. ascites, hepatomegaly	Chemotherapy may be indicated
Pulmonary fibrosis	Steroids; reassessment of oxygen requirements with disease progression
Superior vena cava obstruction	Steroids; consult oncologist for treatment of underlying tumour, radiotherapy

Management

Goals of management

- Define the goals of care, dependent upon: the wishes of the patient, the prognosis, the likely benefit of treatment and the risks and inconvenience of treatment and investigation.
- Identify whether chronic onset or rapid onset and whether death is imminent (i.e. the terminal phase, the last hours or days of life) (National Library for Health - UK 2004).
- Use non-pharmacological and pharmacological measures to reduce breathlessness and its perception.

Non Pharmacological Management

- **Positioning** - sit the patient up, avoid abdominal or chest compression and restrictive clothing.
- **Airflow** - encourage cool airflow over the face - open window, electric fan, ceiling fan, hand held fan.
- **Distraction** - reading, relaxation, company, music, TV or radio.
- **Energy conservation**
 - Functional pacing: encourage pacing and planning of exertion to tolerance.
 - Consider Physiotherapy /Occupational therapy referral.
- **Controlled Breathing**
 - Aim to reduce the rate of breathing (breath in, blow out).
 - Encourage diaphragmatic (“use lower chest muscles”) breathing and pursed lip breathing.
 - Encourage relaxation of shoulders (e.g. take weight off the shoulders by resting arms on support) and upper chest muscles on breathing.
 - Massage of shoulders may further assist relaxation and encourage diaphragmatic breathing.
- **Assess psychological factors**
 - Listen to, understand, and address the patient's fears.
 - Relaxation techniques used regularly can reduce long-term levels of anxiety and can be taught.
 - Written management plan for patient /carers.

Pharmacological Management

Reduce the perception of dyspnoea

- Opioids are the drug of choice and should be considered where there is dyspnoea at rest or on minimal exertion. RCT level 4 evidence (Abernethy, Currow et al. 2003). Take care in patients with renal impairment.
- Oral Morphine:
 - If opioid naïve, start with morphine mixture 2.5mg 4hrly PRN +/- background long-acting morphine 10 - 20mg daily;
 - If established on a regular opioid: increase the dose by 30 – 50% every 2 – 3 days (titrate benefit versus side effects);

- There is no evidence of benefit from nebulised opioid over an equivalent parenteral or oral dose.
- Use parenteral morphine (oral: parenteral equivalence is 3:1) only if unable to swallow or tolerate oral morphine mixture.

Treatment of anxiety/ depression

- If anxiety/panic is identified to contribute to episodes of dyspnoea, consider an Anxiolytic agent:
 - Trial a low-dose benzodiazepine e.g.:
 - Alprazolam 0.125mg 6hrly prn (less sedating than others) works well in practice, is PBS prescribable for panic disorder, but the few studies which consider its role in COPD are disappointing.
 - or
 - Oxazepam 15mg 6 hrly prn.
 - or
 - Diazepam 2mg 8 hrly prn.
 - For patients who are unable to swallow:
 - Midazolam 2.5mg sc or sublingual up to ½ hrly x 2 - 3 doses initially until settled, followed by 5 - 10mg CSCI per 24 hrs.
 - or
 - Clonazepam 0.25mg bd, sc or sublingual, to 0.5mg bd. Be aware of the long half life and resulting cumulative effect.
- Co-existent depression should be actively managed. Even in the absence of clinical depression, there is some evidence of benefit from SSRI's in reducing the subjective sensation of breathlessness. It is postulated that serotonin may modulate central control of respiration.

Use of dexamethasone

- Dexamethasone has assumed the position of steroid of choice in palliative care due to its high potency, low mineralocorticoid activity, and convenient formulations.
 - Consider a trial of dexamethasone 8mg daily (single morning dose) in the setting of chronic onset dyspnoea if there is:
 - pressure from primary or metastatic tumour on lung structures; or
 - infiltration or lymphangitis carcinomatosa.
 - For acute dyspnoea in the setting of malignancy where SVC obstruction or upper airways obstruction (presence of stridor); intravenous dexamethasone 16mg is an appropriate action whilst further specialist opinion is being sought.
 - Contraindications – proximal myopathy, wakefulness, agitation, loss of control of diabetes.
 - Plan for the need to monitor, wean, cease.

Role of supplemental oxygen

- Supplemental oxygen (O₂) is not necessarily the answer to breathlessness, and is not without risks.
- For dyspnoeic patients with oxygen saturation at rest or on exertion ≤ 90% (corresponding to PaO₂ approx 60mmHg) a therapeutic trial of oxygen therapy may be reasonable, but continued use (continuous, short burst, or ambulatory) can only be justified if there is acknowledged symptomatic benefit.

- The role of long-term continuous oxygen therapy in reducing mortality and improving quality of life for hypoxaemic ($\text{PaO}_2 \leq 55\text{mmHg}$) patients with chronic lung disease is well established.
- There is little evidence concerning the use of oxygen supplementation for patients suffering from advanced cancer, however the [Position statement of the Thoracic Society of Australia and New Zealand](#) asserts that intermittent oxygen therapy may be indicated “for patients with intractable dyspnoea due to terminal illnesses, ... who have significant hypoxaemia. In these patients, who will usually have a life expectancy of less than 3 months, supplementary oxygen may provide symptomatic relief.”
- There is no evidence of symptomatic benefit in non-hypoxic ($\text{ABG PaO}_2 \geq 55\text{mmHg}$) patients. An international multi-centre double blind randomised study of oxygen versus air in oxygen naïve patients with refractory dyspnoea and $\text{PaO}_2 > 55\text{mmHg}$ is presently underway.
- Patients suffering severe breathlessness who are not hypoxic, and have failed to respond to pharmacological interventions, may be considered for a trial of supplemental oxygen on compassionate grounds.

Obtaining supplemental oxygen

- The Thoracic Society of Australia and New Zealand have guidelines on the supply and use of [Adult Domiciliary Oxygen Therapy](#).
- The supply of supplemental oxygen requires the authority of the patient’s treating medical specialist or a palliative care medical specialist.
- Oxygen concentrators are generally used in preference to oxygen cylinders in the home situation because they are safe and economical. Small oxygen cylinders can be arranged for transport in private cars.
- Smokers: supplemental oxygen is not supplied to patients who continue to smoke.

Adverse effects of oxygen therapy:

- Patients and families need to be aware that supplemental oxygen has negative effects and can:
 - Promote anxiety;
 - Other factors contributing to sensation of breathlessness may not be addressed;
 - Dependency on the equipment can lead to anxiety in the event of equipment failure;
 - If given whilst an inpatient, patient and family seek readmission if not available at home;
 - Powerful placebo - anxiety when placebo effect fails;
 - Due to the dryness of gas it can cause:
 - Nasal dryness/ crusting/ bleeding;
 - Upper airways irritation – increased cough;
 - Theoretically increased likelihood of respiratory tract infection;
 - Trauma due to tubing;
 - Pressure ulcers around ears/ nasal trauma;
 - Trips/ falls;
 - Noisy apparatus;
 - Contributes to insomnia;
 - Negative impact on quality of life;

- Reduced mobility – confined to radius of O₂ tubing;
- Apparatus discourages intimacy;
- Reinforces sick role / loss of independence / encourages hospitalisation; or
- Rarely, may increase CO₂ retention – somnolence, headache, death.

Consultation and advice

Consider seeking advice:

- Where there are concerns about opioid therapy;
- Breathlessness is not responsive to outlined management;
- Situations where radiotherapy or stenting might be indicated e.g. large airway obstruction, bleeding;
- Pleural, pericardial or ascitic drainage; or
- Doubts about indications for starting or continuing oxygen therapy.

Definition

- **Dyspnoea:** Shortness of Breath, Breathlessness: the subjective sensation of difficult or uncomfortable breathing.

Revision history and planned frequency

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