



دست‌نویس حرکات حکیه

Breathlessness* in cancer

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Definition

Breathlessness is a distressing symptom experienced commonly by patients with advanced disease. The most widely cited definition continues to be the 2001 American Thoracic Society consensus statement, which outlines breathlessness as “a subjective experience of breathing discomfort that consists of qualitatively distinct sensations that vary in intensity. The experience derives from interaction among multiple physiologic, psychological, social, and environmental factors, and may induce secondary physiologic and behavioral responses.”



Breathlessness is one of the most common and distressing symptoms for both patients and relatives as the end-of-life approaches.

The prevalence of dyspnoea varies with the site of primary cancers and the stage of illness. In patients with primary lung cancers, the prevalence of dyspnoea reported ranges from 75% to 87%

- it has a reported incidence of 29 to 74% of people near the end-of-life
- the distress caused by breathlessness should not be underestimated
- a careful evaluation of the nature of the breathlessness is important
- listening to the descriptors (the language that the patient uses to describe the sensation) of the quality and quantity of breathlessness is important in choosing management
- breathlessness will only rarely be expressed in purely physical terms
- the assessment of breathlessness should use a multidimensional approach, as with the assessment of pain
- identifying the cause(s) is an essential step in effective management

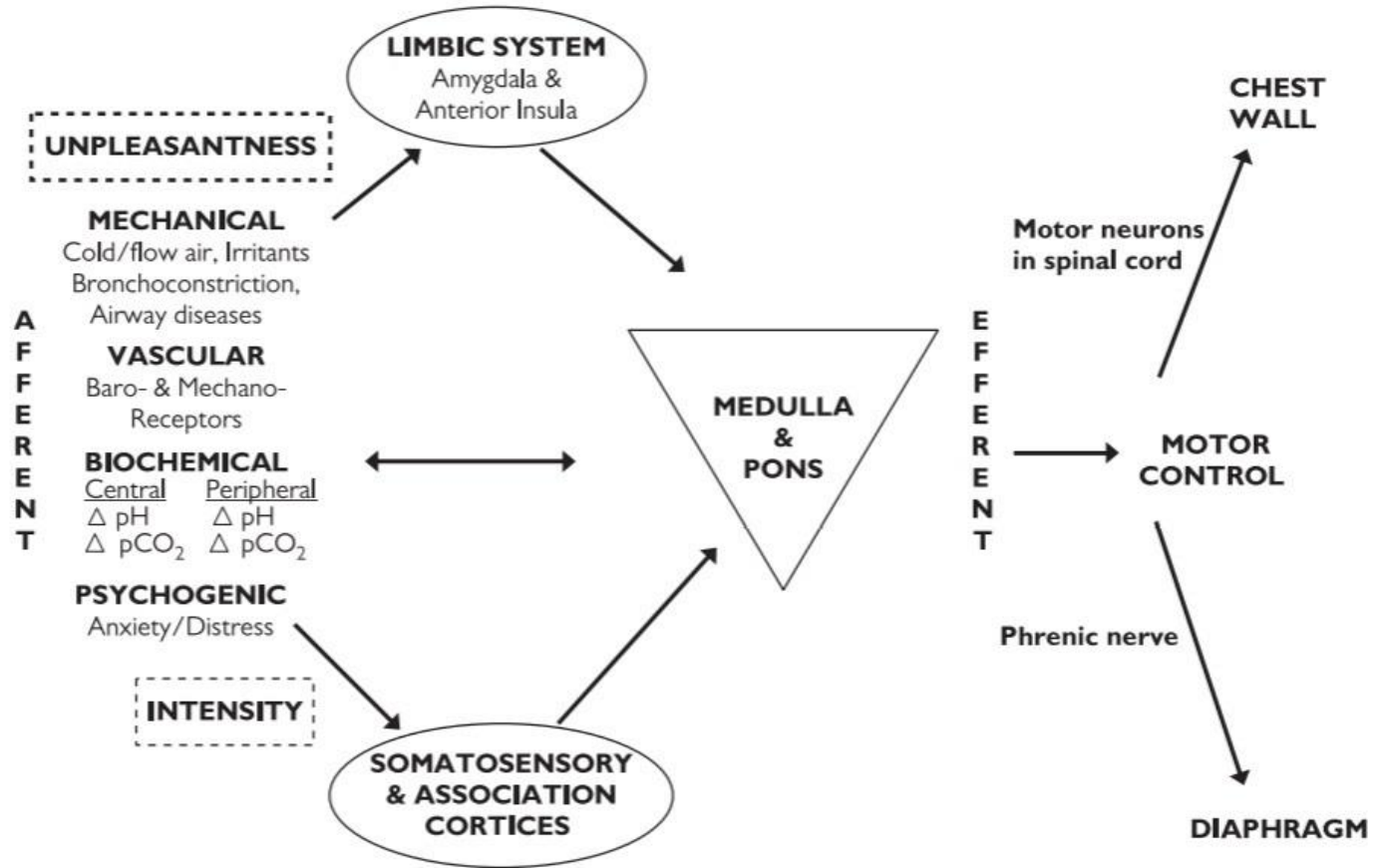
Respiratory symptoms are among the most common at the end-of-life. Dyspnoea (breathlessness), for example, can occur in more than half of patients who are dying, and the incidence increases as death approaches. In addition cough, haemoptysis, are present in a considerable number of people who are dying.

Dyspnoea becomes an important factor predicting the will to live in the terminally ill while approaching death (Chochinov et al., 1999).

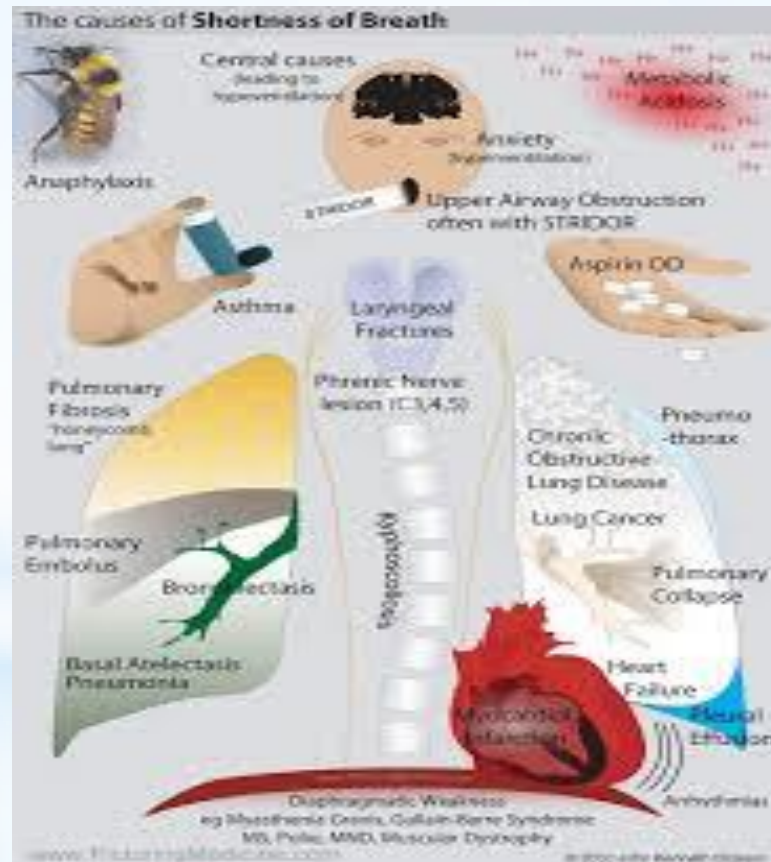
Relieving distress related to respiratory symptoms is key to addressing suffering.



Pathophysiology



Etiology



Malignant

Acute (Within Minutes)

- Pulmonary embolism
- Pneumothorax
- Aspiration
- Anxiety

Subacute (Within Hours to Days)

- Pneumonia
- Pleural effusion (can also be chronic)
- Pericardial effusion
- Superior vena cava obstruction
- Anemia
- Radiation- induced pneumonitis (can also be chronic)
- Progressive metastatic disease (can also be chronic)

Chronic (Within Days to Weeks)

- Radiation- induced pneumonitis/ fibrosis
- Progressive metastatic disease
- Chemotherapy- induced (pulmonary fibrosis, cardiomyopathy)
- Contributing factors may include cachexia, ascites, and/ or hepatomegaly



Nonmalignant

Acute (Within Minutes)

Pulmonary

- Pneumothorax
- Pulmonary embolism
- Bronchospasm
- Acute bronchitis
- Asthma (with previous history)

Cardiac

- Acute myocardial ischemia or infarction
- Anxiety disorder

Subacute (Within Hours to Days)

- Pneumonia
- CHF exacerbation
- Anemia

Chronic (Within Days to Weeks)

Pulmonary

- Obstructive lung disease
- Restrictive lung disease
- Interstitial lung disease
- Pleural effusion

Other

- CHF or ventricular dysfunction
- Neuromuscular disease
- Renal disease



Clinical Evaluation



History

- careful assessment of each situation to identify probable causes is an essential starting point
- pay particular attention to the descriptions the patient gives of the sensation and experience of breathlessness and ask specifically “How would you describe your breathlessness today?”
- severity and meaning for each individual is important as dyspnoea may have a variable effect on quality of life at the end-of-life, varying with the cause(s) and the individual’s perception of the meaning of the symptom



Assessment

Edmonton Symptom Assessment System:
(revised version) (ESAS-R)

Please circle the number that best describes how you feel NOW:

No Pain	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Pain
No Tiredness (Tiredness = lack of energy)	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Tiredness
No Drowsiness (Drowsiness = feeling sleepy)	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Drowsiness
No Nausea	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Nausea
No Lack of Appetite	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Lack of Appetite
No Shortness of Breath	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Shortness of Breath
No Depression (Depression = feeling sad)	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Depression
No Anxiety (Anxiety = feeling nervous)	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Anxiety
Best Wellbeing (Wellbeing = how you feel overall)	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Wellbeing
No _____ Other Problem (for example constipation)	0	1	2	3	4	5	6	7	8	9	10	Worst Possible _____

Patient's Name _____
Date _____ Time _____

Completed by (check one):
 Patient
 Family caregiver
 Health care professional caregiver
 Caregiver-assisted



Clinical Pearl

- The patient's opinion of the severity of the symptoms is the gold standard for symptom assessment.

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Physical Exam

Vital Signs

Observe

Palpate

Auscultate



Clinical Pearls

- Tachypnea does not equate with breathlessness.
- Superior vena cava obstruction (SVCO) causes acute breathlessness and is a medical emergency characterized by swelling and redness of face, distension of superficial and deep neck and upper arm vasculature, and cough.



Laboratory Investigations and Imaging

In patients with advanced disease, the appropriateness of an investigation will depend on the stage of disease and the goals of care. It is important to consider the burden of procedures and weigh this against the risk.



Investigations to consider may include the following:

- CBC, serum K⁺, Mg,...
- Chest X- ray
- Blood gas
- Pulmonary function test
- CT
- Echocardiogram



Management

The mainstay of management of breathlessness is, whenever possible, to identify any underlying cause that is potentially reversible, to begin appropriate and targeted treatment or intervention, to evaluate the effectiveness of the treatment or intervention, and to ensure that the symptom of breathlessness is well managed throughout.



Malignant and paramalignant causes	Cardiopulmonary causes	Treatment
	Lung cancer Secondary to lung	Chemotherapy in selected patients Molecular targeted therapy for adenocarcinoma of lung with epidermal growth factor receptor mutation
	Pleural effusion	Repeated thoracentesis Chemical pleurodesis: talc 90% efficacious Thoroscopic pleurodesis more effective than medical pleurodesis (Shaw and Agarwal, 2004) Indwelling pleural catheter (especially for trap lung) (Davies et al, 2012)
	Superior vena cava obstruction	Stents (95% have relief and faster) (Rowell and Gleeson, 2001) Chemotherapy and radiotherapy (60% in NSCLC) Trial of steroid, diuretics
	Pulmonary embolism	Low-molecular-weight heparin (more efficacious than warfarin)
	Pericardial effusion	Pericardiocentesis, catheter drainage, pericardial window, pericardiectomy
	Major airway obstruction	Radiotherapy, bronchial stent, endobronchial treatment- laser therapy, cryotherapy Trial of steroid
	Lymphangitis carcinomatosa	Trial of steroid
	Radiation-induced pneumonitis	Trial of steroid
	Drug-induced pneumonitis	Trial of steroid
	Chest infection	Antibiotics according to sensitivity
	Systemic causes	
	Cancer cachexia	Prevention of aspiration
	Ascites	Abdominal paracentesis
	Gross hepatomegaly	Prop up position

Non-malignant causes	Cardiopulmonary causes	Treatment
	COPD	Non-pharmacological therapy, breathing exercise Inhaled short acting bronchodilators, Inhaled long acting bronchodilators (beta ₂ -agonist, anticholinergic), inhaled steroid, theophylline, phosphodiesterase-4 inhibitors
	Bronchiectasis	Airway clearance, antibiotics for infective exacerbation
	Interstitial pulmonary fibrosis	
	Congestive heart failure	Angiotensin converting enzyme inhibitors, beta-blockers/hydralazine + nitrate Angiotensin receptor blockers, spironolactone Digoxin, diuretics
	Arrhythmias	Anti-arrhythmic agents
	Systemic causes	
	Muscle weakness: motor neuron disease, muscular dystrophy	Non-invasive ventilation
	Anaemia	Blood transfusion, erythropoietin
	Acidosis	NaHCO ₃
	Deconditioning	Exercise
	Respiratory panic attack	Anxiety management, benzodiazepines

Management

- treat/remove causes where possible with treatments that are similar to those used in general medicine
 - the cancer itself together with radiation or chemotherapy
 - the complications of cancer e.g. pleural effusions, anaemia
 - concurrent non-cancer causes e.g. heart or lung disease



- **non-pharmacological management**

- psychosocial support**

- >> address anxiety and fear by active listening and exploration of the meaning of breathlessness**

- >> explanation and reassurance**

- >> relaxation techniques**

- >> relearning breathing patterns and control**

- >> discuss coping strategies**

- positioning**

- adaptation and energy conservation which is often most effectively undertaken with the help of occupational or physio-therapists or specialist nurses**



- **physiotherapy**
- **drainage of effusions or ascites**
- **blood transfusion may be useful if anaemia is present and it is appropriate**
- **bronchial stents, brachytherapy**
- **complementary therapies e.g. aromatherapy**
- **music engagement, therapy and the arts**
- **draughts of fresh air using fans and open windows**



- **drugs**

- **opioids (usually morphine as efficacy of others have not been studied)**

- **oxygen**

- >> **a draught of fresh air may be as effective as oxygen so only use in hypoxic patients**

- >> **efficacy of oxygen varies between patients but if saturations are < 90% oxygen may have some benefits**

- **nebulised normal saline**

- **bronchodilators (nebulised/inhaled) e.g. salbutamo**

- >> **for patients with reversible airway obstruction!**



— corticosteroids e.g. dexamethasone

>> for patients with lymphangitis carcinomatosa, bronchial obstruction or radiation pneumonitis

— benzodiazepines (short acting) e.g. lorazepam, midazolam

>> in anxious or fearful patients where other methods have failed

— antibiotics

>> if infection is suspected may decrease secretions

— diuretics

>> if congestive heart failure or pulmonary oedema are present

— anticholinergics e.g. hyoscine, glycopyrrolate

>> if secretions are bothersome

Teaching skills to assist the patient in managing breathlessness

- 1. To enable efficient and effective breathing, where possible.**
 - Diaphragmatic breathing exercises involve a combination of:**
 - pursed lip breathing which promotes control, slows the respiratory rate, increases tidal volume and decreases the possibility of airway collapse**
 - controlled breathing with the diaphragm, or lower chest, which helps to improve function and breaks the pattern of upper chest breathing**



- 2. To enable the patient to feel in control by reducing anxiety and panic**
- 3. To enable the patient to adjust and conserve energy for those activities that are important to them. Pacing, prioritizing and problem-solving in relation to activity are all explored with the patient**



Summary

Breathlessness is a common and distressing symptom for patients with advanced disease. Assessment and management plans should be targeted to the individual patient. Reversible conditions contributing to breathlessness should be addressed, and patient self-report should be used in determining severity of the symptom and efficacy of a management plan. No single therapy is likely to resolve chronic breathlessness, but combinations of strategies is likely to improve the burden and impact of breathlessness.

Death rattle

A rattling sound heard in throat caused by secretions that the patient cannot cough longer.



COUGH



Cough is often associated with other symptoms such as dyspnea, wheezing or chest tightness. It is a defensive mechanism – like pain – and it can have a detrimental effect on the quality of life as it interferes with communication, food and drink intake and sleep.



Causes and treatment

- **acute respiratory infection**
- **airways disease**
- **malignant obstruction (tumour)**



- **esophageal reflux**
- **salivary aspiration**
- **cardiovascular causes**
- **pulmonary edema**
- **drugs which can cause cough**



HAEMOPTYSIS

The coughing up of blood from the lungs, or hemoptysis, is often a frightening symptom for both patient and family.



Causes

It is not always possible to identify the cause and it has been suggested that up to 40% of cases remain undiagnosed.

- **tumour erosion – lung or oesophagus**
- **infection**
- **pulmonary embolism**
- **clotting disorders**



Management

- **treat/remove the causes if appropriate**
- **if minor coughing up of blood i.e. flecks or spots of blood**
- **if the bleeding is persistent or is major**



THANK YOU *DR. POONEH PIRJANI*

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