



Shortness of breath

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What is it?

‘a subjective experience of difficult
and uncomfortable breathing’

American Thoracic Society

What do the patients say?

- Cant breathe
- Something on my chest
- Heavy
- A feeling that my chest is being squeezeed
- Tight

Which patients ?

- Cancer patients mainly lung
- Non cancer – mainly COPD and heart failure
- Think about other diseases that may cause associated symptoms leading to shortness of breath eg anaemia, anxiety, muscular diseases etc

Non Cancer

- Symptoms in the final year of life:
- N=683 patients with **HEART** disease
 - 60% had dyspnoea
- ◆ Edmonds et al, Pall Med, 2001:
- ◆ Significantly more patients with **COPD** had dyspnoea in last year & week of life, than lung cancer patients

Respiratory Pathophysiology

- NEUROMUSCULAR:
 - Airway **stretch** receptors
 - Lung **tissue** receptors
 - Respiratory **muscles** & diaphragm
- CHEMICAL:
 - **Peripheral** chemoreceptors
 - Arch of aorta-**O₂**
 - Carotid bifurcation-**O₂**
 - **Central** chemoreceptors
 - Medulla-**CO₂**

Pathophysiology

- Feed back from periphery to medulla
- Feedback from periphery & medulla to cortex
- “Sensation”, “awareness” of dyspnoea-relation to **anxiety**

Causes

- **Airway obstruction**

- **Tracheal**

- Tumour of larynx, thyroid, mediastinum, bronchus
 - Tracheo-oesophageal fistula

- Bronchial**

- Tumour
 - COPD
 - Acute infection, bronchitis
 - Bronchospasm: bronchitis, asthma, carcinoid

Causes

- **Reduction in functional lung tissue**
- **Tumour** : lymphangitis, metastases
 - Surgical resection: lobectomy, pneumonectomy
 - Fibrosis
 - Pleural effusion
 - Pneumothorax
 - Infection
 - Haemorrhage
 - Pulmonary embolism
 - Emphysema

Causes

- **Impaired ventilatory movement**
 - Chest wall weakness, motor impairment, general debility
 - Chest wall pain
 - Elevated diaphragm: ascites, **hepatomegaly**, phrenic nerve lesion

Causes

- Cardiovascular
 - **CCF**, cardiomyopathy, pericardial effusion, constrictive pericarditis, shock, haemorrhage, sepsis
 - Anaemia

Assessment

- Severity of the symptom
- Associated distress and anxiety
- Understanding of the symptom
- Impact and meaning
- Pattern and precipitating / relieving factors
- Identify possible causes and reversibility
- Disease trajectory
- Goal of treatment

Assessment

History

- Pre-existing disease ,respiratory symptoms
- Stage of disease

- Speed of onset
- Duration
- What makes it better/worse?

Breathlessness could be made worse by

- Activity
- Anxiety
- Anaemia
- Cough
- Pain
- Constipation
- Previous experience
- Environmental conditions

Physical examination

◆ What will you look for?

Investigations

– Chest X-ray

– OTHER INVESTIGATIONS(IF APPROPRIATE)

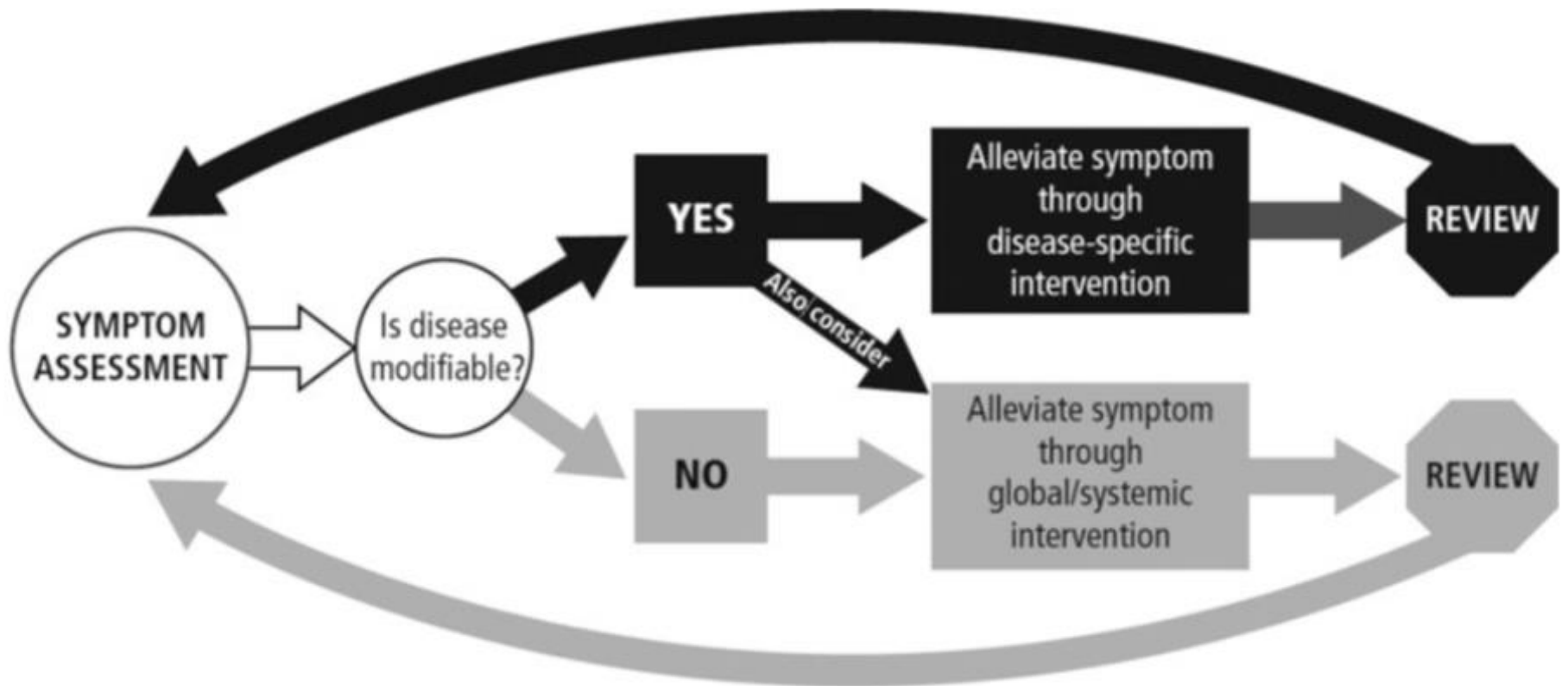
- OXIMETRY,ABGs
- V/Q SCAN, CT Pulmonary angiography

Dyspnoea

- Subjective
- Difficult to control



Biopsychosocial model of dyspnoea management



Management Strategies

Explanation

Realistic reassurance

- **Treat reversible/specific causes**
- **Non-drug treatment**
- **Drug treatment**

Specific situations

- Pleural effusion
 - Aspiration, pleurodesis
- Pericardial effusion
 - Aspiration
- Hypoxia
 - Oxygen
- Lymphangitis
 - Corticosteroids

Management Strategies

Drugs useful specifically in **heart failure**:

- Diuretics
- Digoxin
- Vasodilators
- ACE inhibitors
- ARBs

Drugs used specifically for **COPD**:

- Bronchodilators
- Corticosteroids
- Antibiotics

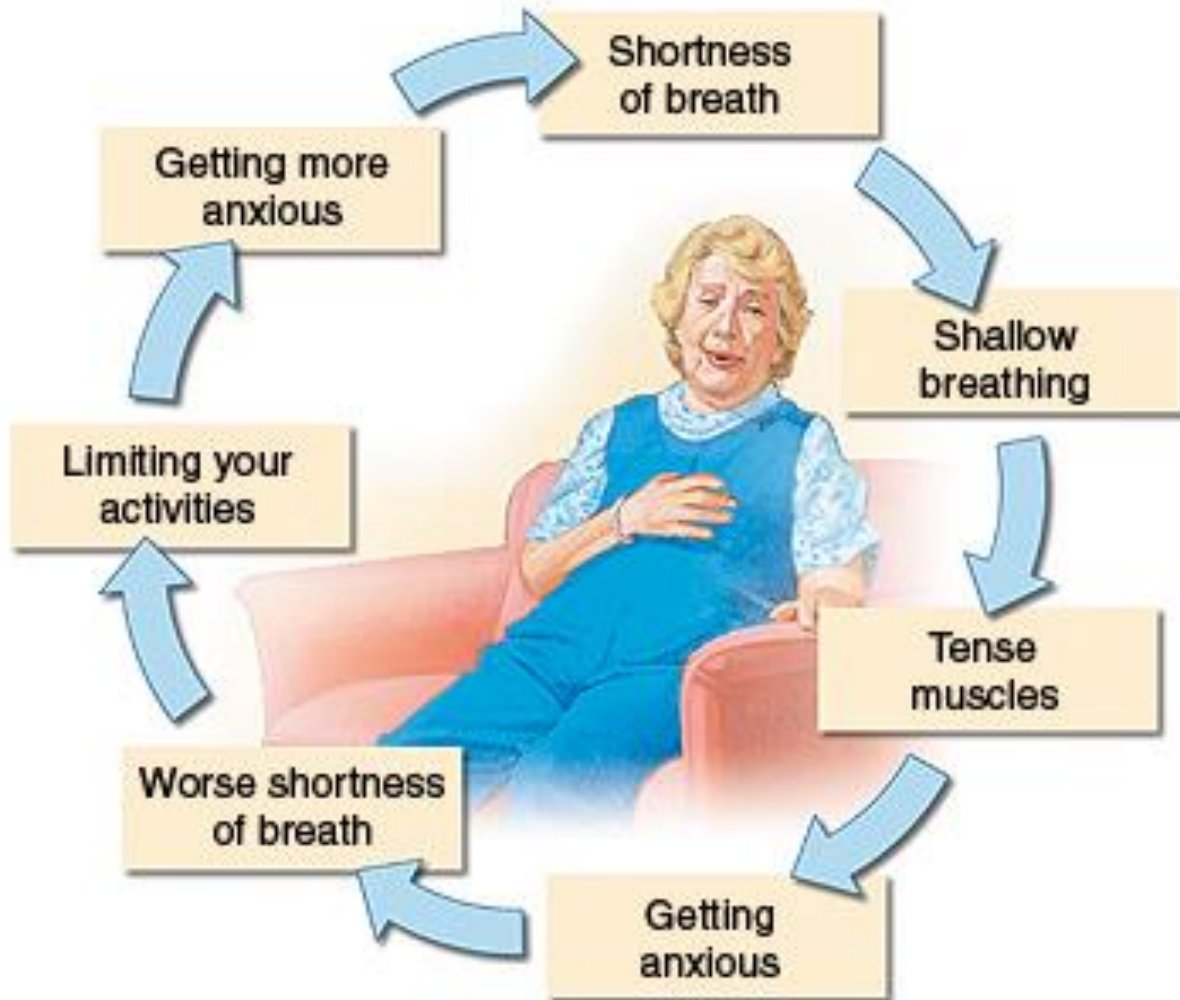
Strategies – general

- Physical -
environmental
measures
- Psychological
- Modify lifestyle and
expectations

General measures

- Reassurance and explanation
- **Cool Stream of Air**
- Distraction / relaxation techniques
 - Controlled breathing
- Position – upright
- Frequent sips of drink
- Bowel, mouth and pressure area care
- Encourage lifestyle adaptations – manage expectations, pace activity

Anxiety



Panic attacks

Non-drug strategies

- Relaxed posture
- Concentrate on breathing out
- Wait for attack to pass
- Massage may help

Panic attacks

Pharmacological measures

Benzodiazepines

- anxiolytic
- muscle relaxant
- sedative

Symptomatic management

- Opioids
- Benzodiazepines
- Corticosteroids

- Trial of oxygen ?
- Environmental measures
- Specific treatment

Role of opioids

- **Decrease sensitivity of respiratory centre and peripheral chemoreceptors**
- Decrease anxiety
- Decrease pain due to hyperventilation
- Improve heart failure
- Reduce hyperventilation due to pain

Opioids

- **Low Dose** oral opioids can improve dyspnoea
 - Level 1 evidence
 - Help 2 in 3 patients
- **CAUTION**
If patient has Type 2 (CO₂ retaining) Respiratory Failure

Opioids

- Immediate release morphine is “gold standard”-other opioids not well-studied
- **Start low and go slow!**
- If opioid-naive, 1-2 mg P.O.q 4h
- Titrate carefully – review regularly

Benzodiazepines

- Probably work via **anxiolytic** & sedative effect-at cortical level
 - End of life
- May potentially decrease ventilatory drive, so **caution** in Type 2 Resp failure
- Short-acting, intermittent - lorazepam, midazolam
- Long-acting-diazepam, clonazepam

Corticosteroids

- Useful in specific situations:
 - Airways obstruction
 - Tracheal tumour
 - SVC obstruction
 - Lymphangitis carcinomatosa
 - Pneumonitis
 - COPD exacerbations

Other drugs

- Mucolytics-for sputum retention
 - Acetylcysteine
 - Normal saline
- Anticholinergics-for excessive secretions
 - Glycopyrrolate,
 - hyoscine hydrobromide/scopolamine
- Anti-cough
 - Local anaesthetics-nebulised for cough

Oxygen

Advantages:

- Reverses Hypoxia
- Improves well being in some patients
- Reassuring effects on patients, relatives and staff - ? Placebo response

Oxygen-evidence

- Air Vs Oxygen Study
- No benefit for O₂ vs air in non-hypoxaemic patients
- Consider trial

Oxygen

Disadvantages:

- Dependence on oxygen source
- Potential loss of respiratory drive (Type 2 Respiratory failure)
- Claustrophobia
- Communication barrier, psychological effect
- Reduces mobility especially out of home
- Dry mouth
- Cost

Will morphine hasten death ?

- There is much evidence that CAREFUL use of opioids & anxiolytic/sedative medications does NOT hasten death/shorten survival
- Dyspnoea may increase

The terminal phase

DIAGNOSE DYING !

Not a sudden event

- Patient bed bound
- Patient Semi Comatose
- Only able to take sips of water
- No longer able to take oral medications

The Terminal Phase

- Evidence from Critical Care/other Acute settings :
- **Poor symptom control** is associated with **unfavourable outcomes** including **HIGHER** death rates

Terminal phase

- Provide ongoing support & information to family

Terminal phase

- Dyspnoea-manage as previously
 - Less reversible causes
- Manage respiratory tract secretions-anticholinergics
- Communicate with family - prepare for changes in patient's breathing pattern

Respiratory Secretions

- Anticholinergics eg hyoscine
 - No clear evidence-stop if no effect
- Positioning patient
- Suction-rarely needed

Terminal Phase

- Antibiotics not usually used
 - May help if purulent secretions
- Consider family wishes
- Continue bronchodilators if helpful

Conclusion

- Shortness of breath is a distressing symptom
- It affects patients individually and subjectively
- It requires careful assessment
- A tailored approach to treatment is important
- Consider patients disease trajectory and goal of care