Breathlessness in advanced disease

February 2017
Breathlessness

I'm having trouble breathing.
Managing breathlessness in primary care

- Chronic breathlessness
- Acute exacerbation of breathlessness
- Breathlessness at end of life
Breathlessness

• Like pain is subjective and involves the perception of breathlessness and the person’s reaction to it

• Anxiety is often a major component
Prevalence

- 2/3 of patients presenting with breathlessness the underlying cause is cardiopulmonary disease
- Common in cancer, esp lung cancers (90% of those with advanced lung cancer)
- Leading cause of hospital admissions
- Frequency and severity increase with progression of disease
- Often persists despite optimal management of underlying condition
Significant risk factors for breathlessness

• Primary lung cancer
• Lung metastases
• Pleural disease
• Pre-existing respiratory or cardiac disease

2nd only to performance status as prognostic factor
Severity increases before death
Lung Cancer

- Most common cancer in Scotland
- 1 in 4 cancer related deaths
- Median survival 4-6 months
- 5 year survival 8%

- WOS 68% present with advanced disease
Chronic breathlessness

- COPD
- Interstitial lung disease
- Cardiac failure
- Progressive neurological disorders
- Cancer
- Cachexia in any late stage illness
Breathlessness-mediated by complex mechanisms

- Can result from impaired ventilation or increased ventilatory demand, or both
- Regulated by medulla
- Afferent inputs from central and peripheral chemo-R and mechano-R from airway, lung, chest wall and respiratory muscles
- Chem-R triggered by hypoxia/hypercapnia
- Mechanical and stretch signals
- Cortical input- emotional and cognition modify breathing
Assessment of dyspnoea

• Timing, severity, onset, precipitating, exacerbating factors

• Associated symptoms (cough, sputum, haemoptysis, wheeze, stridor, pleuritic pain, panic)
Functional impact

• Does it disturb sleep?
• Does it occur at rest?
• Does it interfere with conversation?
• How far can you walk on the flat without rest?
• How many stairs can you climb without stopping?
• Are there things you cannot do because of breathlessness?
Psychological factors

- Descriptors
- Understanding and meaning of breathlessness
- Hyperventilation
- Significant anxiety or depression
- Awareness of situation, and hopes and fears for the future
Assessment

- Clinical examination
- Stage of disease and person’s prognosis
- Risk-benefit ratio of investigation
- Wishes of person and their family
**Examination finding suggesting a diagnosis**

<table>
<thead>
<tr>
<th></th>
<th>Chest expansion</th>
<th>Percussion</th>
<th>Breath Sounds</th>
<th>Added sounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pleural effusion</td>
<td>Reduced on affected side</td>
<td>Stony dull affected side</td>
<td>Absent or decreased</td>
<td>None</td>
</tr>
<tr>
<td>Consolidation</td>
<td>Reduced on affected side</td>
<td>Dull on affected side</td>
<td>Bronchial</td>
<td>Crepitations</td>
</tr>
<tr>
<td>Collapse</td>
<td>Reduced on affected side</td>
<td>Dull on affected side</td>
<td>Absent/decreased</td>
<td>None</td>
</tr>
<tr>
<td>Upper airway obstruction</td>
<td>Reduced</td>
<td>No difference</td>
<td>Depends on severity</td>
<td>Stridor</td>
</tr>
<tr>
<td>Pneumothorax</td>
<td>Reduced</td>
<td>Hyper-resonant</td>
<td>Absent or decreased</td>
<td>None</td>
</tr>
<tr>
<td>Heart failure</td>
<td>Normal/signs effusion</td>
<td>Normal/effusion</td>
<td>Normal</td>
<td>Crepitations</td>
</tr>
<tr>
<td>COPD</td>
<td>?symmetrically decreased</td>
<td>No difference</td>
<td>Normal or silent chest</td>
<td>Wheeze</td>
</tr>
</tbody>
</table>
Investigations to consider in non-acute dyspnoea in palliative care situation

- CXR
- Spirometry
- FBC
- Pulse oximeter
- ECG

- Secondary care: CT chest, CTPA, USS pleural effusion, Echo
<table>
<thead>
<tr>
<th>Causes</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lung tumour</td>
<td>Radiotherapy/chemo</td>
</tr>
<tr>
<td>Bronchospasm</td>
<td>Bronchodilators, steroids</td>
</tr>
<tr>
<td>Infection</td>
<td>Antibiotics</td>
</tr>
<tr>
<td>Pleural effusion</td>
<td>Aspiration, pleurodesis</td>
</tr>
<tr>
<td>Pulmonary embolism</td>
<td>Anticoagulation</td>
</tr>
<tr>
<td>Heart failure</td>
<td>Diuretics, nitrates</td>
</tr>
<tr>
<td>Anaemia</td>
<td>Blood transfusion</td>
</tr>
<tr>
<td>Lymphangitis</td>
<td>Steroids ?diuretics</td>
</tr>
<tr>
<td>Airway obstruction</td>
<td>RT, stenting, laser, steroids</td>
</tr>
<tr>
<td>SVCO</td>
<td>RT/chemo, stent, steroids</td>
</tr>
</tbody>
</table>
Lymphangitis carcinomatosa

• Diffuse infiltration of lymphatic vessels in lungs by malignant disease (most commonly breast and lung)
• Obstructs lymphatic drainage= pulmonary congestion
• Generally poor prognostic sign
• Management with steroids
Non pharmacological management

- Breathing control techniques
- Smoking cessation advice
- Adaptation and coping strategies – pacing, planning and prioritising
- Hand held fan
- Consider need for equipment/ package of care
- Limited evidence for complementary therapies eg. hypnotherapy, acupuncture but patients report benefit
Exploring fears

- fear of death by suffocation
- breathlessness as a danger
- sudden death

Exploring and talk through fears can help relieve breathlessness and improve quality of life
- assisting adjustment to knowledge of cancer
- exploring fear of dying
- acknowledgement of loss
Oxygen

- Oxygen therapy helps severely hypoxic patients with cancer
  - patients with SaO2 < 92% may benefit
  - benefit not necessarily related to degree of hypoxia
  - psychological dependence an issue
  - cool breeze may be as beneficial

- Hand held fan!
Drug management: Opioids

- Morphine reduces excessive respiratory drive
- Strong evidence for a small and probably significant effect of oral and parenteral opioids in the treatment of breathlessness at rest
- Nebulised opioids no additional benefit over nebulised saline
- Systematic review did not show respiratory depression or CO2 retention

# Opioids for breathlessness

<table>
<thead>
<tr>
<th>Patient</th>
<th>Drug</th>
<th>Route</th>
<th>Dose</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opioid naive</td>
<td>Immediate release morphine</td>
<td>oral</td>
<td>2mg</td>
<td>4 hourly and prn</td>
</tr>
<tr>
<td>Opioid naïve Unable to take oral meds</td>
<td>Morphine sulphate</td>
<td>subcutaneous</td>
<td>1-2mg</td>
<td>4 hourly and prn</td>
</tr>
<tr>
<td>On regular opioid for pain</td>
<td>Use existing IR breakthrough</td>
<td>oral</td>
<td></td>
<td>Titrate regular By response prn</td>
</tr>
<tr>
<td>Frail/elderly</td>
<td>Immediate release morphine</td>
<td>oral</td>
<td>1-2mg</td>
<td>6-8 hourly</td>
</tr>
<tr>
<td>Ongoing SOB</td>
<td>Try modified release</td>
<td>oral</td>
<td></td>
<td>Based on prn use Prn</td>
</tr>
</tbody>
</table>
Steroids

- Trial Dexamethasone 8-12mg oral or subcutaneously for lymphangitis or tumour associated obstruction
- Consider gastric protection
- Review after 1 week-if no effect stop
- Otherwise reduce gradually to lowest effective dose
Benzodiazepines

- May relieve associated anxiety and panic
- Less effective than Opioids should be third line for symptoms unresponsive to non-drug measures and opioids
- Lorazepam (scored) sublingual 500 micrograms Genus, PVL, TEVA brands
- Diazepam oral 2 to 5mg
- Midazolam subcut 2 to 5 mg
The severity of the breathlessness and the patients prognosis may help determine a management strategy.

Breathlessness on exertion
Breathlessness at rest
Breathlessness

Non-pharmalological management
Pharmalogical management
In summary

• Patient living with breathlessness
  assess
  explore fears
  treat the treatable
  teach breathing control/ coping strategies
  oral morphine
  +/- benzodiazepines
  nebulised drugs
In summary

• Terminal breathlessness
  assess
  explore fears
  parenteral opioids
  +/- nebulised drugs
  sedation