Management of respiratory distress in the palliative care setting

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Overview

- Introduction (causes, prevalence, impact)
- Case study (not included in presentation for publication)
- Management
  - Non-pharmacological
  - Pharmacological
- Questions

Dyspnoea - causes

**Pulmonary Causes**
- Lung Metastases
- Pleural or Pericardial Effusions
- Interstitial Lung Disease (radiation / chemotherapy induced)
- Chest Infection
- Atelectasis
- Airway obstruction – lower
- Pulmonary Embolus (rare in children)

**Non-pulmonary Causes**
- Anaemia (Haemoglobin < 8 g / dL)
- Airway obstruction - upper
- SVC obstruction / Mediastinal Disease
- Anxiety / fear
- Increased secretions
- Cardiac failure
- Chest wall pain / constriction
- Elevated diaphragm: ascities, abdominal mass

Symptoms in Palliative Care Phase

Based on a review of 170 deaths over a 2.5 year period in Brisbane.

Respiratory Symptoms

- Cough, tachypnoea, dyspnoea, congestion, air hunger, breathlessness, nasal flare
- Identify what exacerbates or relieves symptoms
- Early in palliative phase focus is to improve respiratory effort later in terminal phase focus is to alleviate anxiety related to respiratory changes and shortness of breath

Children’s description of the experience of breathlessness (Prasad)

- Tired
- Tight
- Hard
- Wheezy
- Hot
- Can't speak properly
- Sucking air out of me
- Something stuck down my throat
- Pain in the chest
- Someone standing on your chest
- Someone trying to suffocate you
- Like an elephant sitting on your chest
- Being underwater and difficult to get air after you come up
- Feels like you're going to die
Impact of Breathlessness
- Causes physical limitations for patient
- Associated psychological distress
- Distress for the carers
- Impact on sleep
- Home bound → Bedroom bound (importance of portable cylinders)

Pharmacological Interventions
- Opioids
  Mechanism:
  - not exactly clear
  - diminish the chemoreceptor response to hypercapnia and hypoxia
  - cause vasodilation resulting in decreased dyspnoea due to the resulting reduction in preload and pulmonary congestion
  - facilitate a decrease in anxiety and the subjective sensation of dyspnoea without reducing respiratory rate or oxygen saturation

Pharmacological Interventions
- Opioids
  Dosing:
  - If patient not in pain, suggest morphine 0.1 mg / kg every 2-4 hours as required orally or sublingually, or 0.05 mg / kg every 2 – 4 hours SC / IV (starting dose is ¼ to ½ of that used for pain)
  - If already on morphine / opioids, increase dose by 1/3rd to ½
  - Can utilise an infusion (SC or IV) for severe persistent symptoms

Opioids – the evidence (1)
- Abernethy, Currow et al. BMJ 2003
  - Randomised, double blind, placebo controlled crossover study.
  - 38 participants with COPD
  - 20 mg of slow release morphine daily
  - 7-10 mm improvement in the visual analogue scale for dyspnoea
  - Better sleep; Constipation was main side effect
  - Respiratory depression was not an issue
  - Meta-analysis, Cancer, 256 patients confirmed above.

Opioids – the evidence (2)
  - 83 participants
  - Chronic respiratory distress
  - 52 patients responded to morphine
  - 35 required 10 mg morphine daily
  - 13 required 20 mg
  - 4 required 30 mg
  - Dose titration at weekly intervals

Role of Other Opioids
- Oxycodone
  - Retrospective study
  - As an alternative to morphine, and utilised as an infusion
- Fentanyl
  - Oral transmucosal fentanyl citrate
  - Effects on muscular rigidity and chest wall compliance
Breathlessness

Anxiety

Benzodiazapines

- Clonazepam and lorazepam can be given sublingually.
- Midazolam can be given via buccal or intranasal route.
- Midazolam can also be given IV or SC either as bolus or infusion.
  - Anxiolysis: 10 – 30 mcg / kg / hour
  - Sedation: 60 – 300 mcg / kg / hour

Pharmacological Interventions

- Benzodiazapines
  - The addition of benzodiazepines to morphine was significantly more effective than morphine alone, without additional adverse effects.
  - Did not worsen respiratory failure.

- Other
  - Cough suppressants
    - Opioid, Codeine, Dextromethorphan
  - Anticholinergic agents
    - Glycopyrrolate, Hyoscine Hydrobromid, Atropine
  - Steroids
  - Diuretics
    - Particularly if fluid overload or cardiac failure present

Nebulised Therapy

- Saline
- Bronchodilators
- Frusemide
- Morphine
  - Can consider a trial of nebulised morphine

Non Pharmacologic Interventions (1)

- Breathing training and walking aids
- Neuro-electrical muscle stimulation
- Chest wall vibration
- Tailored instructions delivered by nurses with sufficient training and supervision (Yates, Zhao 2008)
- Raising head of bed 30 to 45 degrees
- Motorised bed, egg shell / air mattress
- Pillows for positioning – loose clothing
- Small frequent meals – fluids
- Room air to have good cross flow, use of humidifier and fan for circulating air
Non Pharmacological Interventions (2)
- Cool compresses can also assist over cheek and temporal area
- Eliminate smoke and any known allergens, perfumes
- Guided imagery, distraction, relaxation, audio books, music, art, deep breathing to reduce anxiety, and massage (if able)
- Spiritual support / reassurance
- Suction – open for debate

Non Pharmacological Interventions (3)
- Oxygen via nasal prongs or mask in situ or on pillow, concentrators / portable oxygen tanks
- Role of non-invasive ventilation and high flow oxygen
- Mouth care – lip moisturiser
- Radiation therapy
- Aids, equipment, increased home support, or modification of daily activities to minimise breathlessness.
- Drainage of effusions and ascities – temporary relief

Other issues to consider
- Education of family
- Child if able to be involved in decision making
- Child to have control where possible
- Updated medical notes across care providers in case of transfer – ED, local hospital, GP, community teams

PleurX catheter

Pleurodesis
- If a malignant pleural effusion requires drainage, thoracoscopic talc pleurodesis has been shown to be the most effective approach.
- Clinically appropriate to consider this option when the patient has a life expectancy of months or more

Summary
- Causes
- Prevalence
- Impact
- Pharmacological Approaches
  - Opioids
  - Benzodiazepines
- Non-pharmacological Approaches
  - Including PleurX Catheter and Pleurodesis