Cough

KEY POINTS

- Cough may be related to the disease, the treatment, or may be unrelated
- Cough can be a distressing symptom for the patient and interfere with sleep, but it is often under-treated
- Using cough suppressants (e.g. dextromethorphan or morphine) can bring symptomatic relief and improve quality of life

ASSESSMENT

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- Taking a thorough history and performing a good clinical assessment are important to identify the underlying cause(s) of the cough
- Common causes of cough in palliative care include:
  - Upper airway cough syndrome (formerly post-nasal drip)
  - Tumour
  - Pleural effusion
  - Asthma
  - Pulmonary edema, decompensated congested heart failure (CHF)
  - Lymphadenopathy
  - Gastroesophageal reflux
  - Angiotensin-converting enzyme (ACE) inhibitors
  - Treatment related (e.g. radiation therapy to the chest)
- Investigations to consider may include:
  - Chest x-ray/CT to assess possible cause

MANAGEMENT

- Consider treatment of the underlying cause, e.g. oncological treatment of tumour, draining of pleural effusion, treatment of infection, gastric reflux

Consider if the patient is well enough to benefit

- Simple measures such as nebulized 0.9% saline can be helpful
- Simple cough lozenges may be tried
- If productive, an expectorant such as **Guaifenesin 200-400 mg PO q4h PRN** can be tried
- **Dextromethorphan 30 mg (or higher doses) PO q4h**
- If ineffective, **morphine or another opioid** should be used
- Codeine should be avoided if at all possible because its metabolism varies significantly between individuals (see section on Pain for information about risks of codeine)

Pharmacological Recommendations

- Identify and treat cause(s) of cough
- If not possible, consider a symptomatic approach based on the type of cough:
  - Protussive treatments: mucolytic, improve effectiveness of cough
  - Antitussive treatments: peripheral or central action; reduce intensity and frequency of cough

Protussive agents:

- **Nebulized 0.9% saline solution 2.5-5 mL QID**
- **Guaifenesin 200-400 mg PO q4h; maximum: 2400 mg/day**
  - **Acetylcysteine 3-5 mL of 20% solution or 6-10 mL of 10% solution inhaled via nebulizer TID or QID**
  - Note: give nebulized salbutamol prior to treatment to reduce risk of bronchospasm

Antitussive agents:

- **Dextromethorphan 15-30 mg PO q4-8h; maximum: 120 mg/day**
- **Morphine 2.5-5 mg PO q4h; titrate to effect**

- **Gabapentin target dose of 300-600 mg PO TID; start with 100 mg PO BID for frail patients**
- **Dexamethasone 2-8 mg PO daily**
  - **Indications:** Uncontrolled asthma, stridor, tumour-related oedema, chronic interstitial lung disease, lymphangitis, radiotherapy/chemotherapy-induced pneumonitis carcinomatosis
- **Lidocaine 2% preservative-free – 2-5 mL in 1 mL of normal saline nebulized via mouthpiece q4h.** Note: keep patient NPO for at least 1 hour after use to prevent aspiration, may require salbutamol pre-treatment to prevent bronchospasm

Opioids for Cough

- The initial starting dose will depend on the patient's previous exposure to opioids
- Opioid naïve: **Morphine 2.5 mg PO q4h (or 1-2 mg Subcutaneous/IV) and a breakthrough or rescue dose every hour, as required**
- For patients already on opioids: increase dose by 20%

Other Pharmacological Treatments

- Inhaled corticosteroids may be helpful
- If thick secretions are difficult to clear, consider using nebulized normal saline or hypertonic saline

- **Children with persistent non-productive cough (like adults) may benefit from opioids**
- **Morphine**
  Starting doses for opioid-naïve infants less than 6 months:
  0.025 mg/kg/dose Subcutaneous/IV q4-6h PRN, or 0.05 mg/kg/dose PO q4-6h PRN
- **Do not use codeine in children**
  (see Pain section for details)

- **Starting dose for opioid-naïve infants/children more than 6 months: 0.05 mg/kg/dose Subcutaneous/IV q4-6h PRN, or 0.1 mg/kg/dose PO q4-6h PRN**

- **There is limited evidence to support the efficacy of cough treatments in children. It is discouraged in children <6 years of age due to risk of adverse events from unintentional overdose**

- **Guaifenacin (for productive cough)**
  6-11 years: 100-200 mg PO q4h PRN
  (Maximum: 1200 mg/day)
  ≥12 years: 200-400 mg PO q4h PRN
  (Maximum: 2400 mg/day)

- **Dextromethorphan**
  6-11 years: 10 mg PO q4h PRN (Maximum: 60 mg/day)
  ≥12 years: 20 mg PO q4h PRN (Maximum: 120 mg/day)

- **Dexamethasone (systemic corticosteroid)**
  0.6 mg/kg/dose PO/IV (Maximum: 8 mg/dose) x 1 dose
  Reassess response to treatment before repeating doses

PITFALLS/CONCERNS

- In patients in the final terminal phase, i.e. hours to days, antibiotics will make little difference
- Suctioning should be avoided other than for tracheostomy, oesophageal obstruction, or massive secretions at end of life
- Repositioning to side-lying with head of bed raised often helps

PALLIATIVE TIPS

- A bedtime dose of morphine can help suppress the cough and allow for an undisturbed sleep

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