

**Palliative Care Tip – Issue#4:
DYSPNEA/BREATHLESSNESS / April 20, 2018**

Definition:

1. An uncomfortable sensation or awareness of breathing
2. A frequent and often devastating symptom of cancer and other end of life illnesses

Causes:

1. Direct effects of cancer, e.g.:
 - airway obstruction, lung collapse
 - lymphangitic carcinomatosis
 - pleural/pericardial effusion
 - post-obstructive pneumonia
 - superior vena cava (SVC) obstruction
 - muscle weakness*

* may be secondary to neuromuscular disease, cachexia, steroid myopathy, phrenic nerve paralysis
2. Indirect effects of cancer, e.g.:
 - pneumonia
 - anemia
 - pulmonary embolus
 - airway secretions
3. Cancer treatment, e.g.:
 - radiation or chemotherapy induced pneumonitis, lung resection
4. Unrelated to cancer, e.g.:
 - chronic obstructive lung disease
 - congestive heart failure
 - motor neuron disease
 - Interstitial lung disease

Approach:

1. Determine the underlying cause(s):
 - history and physical
 - investigations as appropriate
2. Treat the underlying cause(s), if possible and clinically appropriate. Specific situations:
 - a) Airway or SVC obstruction
 - consider radiotherapy and/or chemotherapy depending on histology (consult oncology).
 - try dexamethasone, common initial dose 8 mg po/subcut. bid¹ (8am/noon), best for steroid responsive tumours otherwise effectiveness not well studied. Avoid long term, taper as able.
 - SVC stenting: high rate of procedural success and symptom relief, limited availability
 - b) Lymphangitic carcinomatosis
 - dexamethasone, see guidelines above². Discontinue if ineffective after short course
 - c) Pleural effusion
 - therapeutic thoracentesis; if effective, consider pleurodesis or indwelling pleural catheter for recurrent effusion (consult pulmonary, thoracic surgery or interventional radiology)
 - d) Pericardial effusion
 - Cardiology consult for fluid removal/ re-accumulation prevention depends on prognosis and goals of care³ Thoracic surgery for pericardial window (apart from breast cancer and lymphoma highly likely to recur)

EDMONTON ZONE – PALLIATIVE AND END OF LIFE CARE

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LAST REVISION DATE: [20, APRIL 2018]

3. Treat the symptom:
 - a) General Measures
 - Modify activity level, fan with cool air blowing on the face⁴
 - b) Oxygen
 - effectiveness variable → benefit seen mainly in hypoxemic patients^{5,6}, but assess individual subjective response
 - no literature to support High flow Nasal Oxygen → potentially useful in patients with lung cancer, large effusions or pulmonary fibrosis. A study is under way: High-flow Nasal Oxygen in Palliative Care: Pilot Study (OXPALL) at ClinicalTrials.gov
 - c) Opioids
 - if already prescribed for pain, titrate to relieve dyspnea
 - Choice of opioid/dosing depends on previous opioid exposure, renal function, etc.
 - if opioid naïve, consider morphine (short acting) 2.5-5 mg po/1-2.5 mg sc q1h prn → titrate as tolerated (studies in noncancer population with breathlessness show as low as morphine 10 mg po daily may be effective and more patients fails to tolerate side effects of opioids when \geq morphine 30 mg po daily, remember laxatives and antiemetic)
 - current evidence does not support the use of nebulized opioids
 - d) Bronchodilators
 - Manage potentially reversible airway obstruction if concurrent asthma, COPD
 - e) Anxiolytics
 - By removing the perception of dyspnea, opioids often relieve anxiety. If residual anxiety, treat as per clinical situation
 - f) Non-invasive ventilation (NIV)
 - No strong evidence. Small number of patients in the studies. If it is found to be helpful, benefits are sustained for only for a short-term only (a few hours or days). More helpful in individuals with COPD exacerbation (increased PCO₂) and acute congestive heart failure, and ALS (neuromuscular disorders). May decrease work of breathing and minimize opioid requirements. Use limited by patient alertness/tolerance⁷.
 - g) Midazolam:
 - for refractory severe dyspnea in patients expected to die within days to hours, refer to Tips on Palliative Sedation (Issue 21)

Remember that the endpoint is relief of subjective dyspnea, not physical signs of respiratory effort (family members may need to be educated, such as the role of O₂ monitor for final hours to days are not helpful).

Suggested Readings:

Clinical Practice Guideline SUPP-007 Version 2. Effective date: September 2014. Oncologic Emergencies: A guide for family physicians (malignant airway obstructions, SVCO) <https://www.albertahealthservices.ca/assets/info/hp/cancer/if-hp-cancer-guide-oncologic-emergencies.pdf>

Clinical Practice Guideline RT-005 Version 1. Effective date: July 2016. Palliative Radiotherapy: Superior Vena Cava Obstruction, Dyspnea, and Hemoptysis <https://www.albertahealthservices.ca/assets/info/hp/cancer/if-hp-cancer-guide-pal006-palliative-rt-svco.pdf>

Barnes H, McDonald J, Smallwood N, Manser R. Opioids for the palliation of refractory breathlessness in adults with advanced disease and terminal illness. *Cochrane Database Syst Rev.* 2016 Mar 31;3:CD011008. doi: 10.1002/14651858.CD011008.pub2. PMID:27030166

Galbraith S, Fagan P, Perkins P, Lynch A, Booth S. Does the use of a handheld fan improve chronic dyspnea? A randomized, controlled, crossover trial. *J Pain Symptom Manage.* 2010 May;39(5):831-8. doi: 10.1016/j.jpainsymman.2009.09.024. PubMed PMID: 20471544.

Philip J, Gold M, Milner A, Di Iulio J, Miller B, Spruyt O. A randomized, double-blind, crossover trial of the effect of oxygen on dyspnea in patients with advanced cancer. *J Pain Symptom Manage.* 2006 Dec;32(6):541-50. PubMed PMID:17157756.

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LAST REVISION DATE: [20, APRIL 2018]

Ekström M, Ahmadi Z, Bornefalk-Hermansson A, Abernethy A, Currow D. Oxygen for breathlessness in patients with chronic obstructive pulmonary disease who do not qualify for home oxygen therapy. *Cochrane Database Syst Rev.* 2016 Nov 25;11:CD006429. PMID:27886372

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