Part 2: Pain and Symptom Management
Dyspnea

Effective Date: February 22, 2017

Key Recommendations

- Use opioids first line for pharmacological management of dyspnea for patients with incurable cancer.
- Use of opioids in the non-cancer population for breathlessness, especially those with chronic obstructive pulmonary disease (COPD), needs extreme caution
  and probable consultation with a Palliative Care Physician.

Definition

Dyspnea is breathing discomfort that varies in intensity but may not be associated with hypoxemia, tachypnea, or orthopnea. It occurs in up to 80% of patients with advanced cancer.[1]

Assessment

Investigations and imaging should be guided by stage, prognosis, and whether results will change management.

1. Ask the patient to describe dyspnea severity using a 1–10 scale.
2. Identify underlying cause(s) and treat as appropriate.[2]
3. History and physical exam lead to accurate diagnosis in two-thirds of cases.[3]
4. Investigations: CBC/diff, electrolytes, creatinine, oximetry +/- ABGs and pulmonary function, ECG, BNP when indicated.
5. Imaging: Chest x-ray and CT scan chest, when indicated.

Management

1. Proven therapy includes opioids for relief of dyspnea. For non-cancer patients with breathlessness, especially those with COPD, use of opioids requires extreme caution and consultation with a Palliative Care Physician should be considered.[4]
2. Oxygen is only beneficial for relief of hypoxemia.[5]
3. Adequate control of dyspnea relieves suffering and improves a patient's quality of life.[6]
4. Treat reversible causes where possible and desirable, according to goals of care.
5. Always utilize non-pharmacological treatment: education and comfort measures.

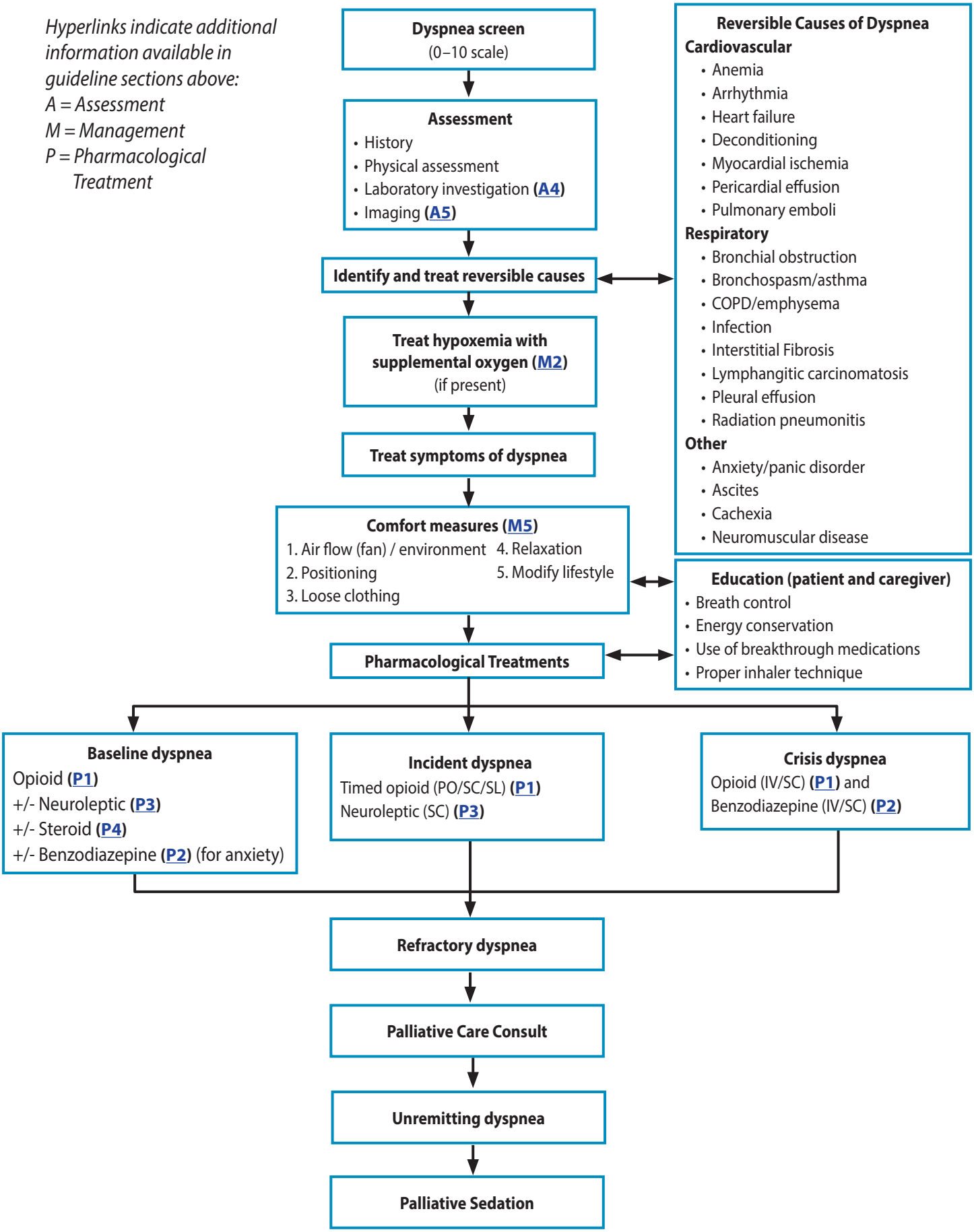
Pharmacological Treatment

Opioids, +/- benzodiazepines or neuroleptics, +/- steroids.

Drug	Comments
1. Opioids (drugs of first choice)	• If opioid naïve, start with morphine 2.5-5 mg PO (SC dose is half the PO dose) q4h or equianalgesic dose of hydromorphone or oxycodone. • Breakthrough should be half of the q4h dose ordered q1h prn. • If opioid tolerant, increase current dose by 25–50%. • When initiating, start an antiemetic (metoclopramide) and bowel protocol. • Therapeutic doses used to treat dyspnea do not decrease oxygen saturation or cause differences in respiratory rate or CO_2 levels.[3] • Nebulized forms have NOT been shown to be superior to oral opioids and are not recommended.[7]
2. Benzodiazepines	• Prescribe prn for anxiety and respiratory "panic attacks". • Lorazepam 0.5-2 mg SL q2-4h prn. • Consider SC midazolam in rare cases.
3. Neuroleptics	• Methotrimeprazine 2.5-5 mg PO/SC q8h, then titrate to effect.
4. Corticosteroids	• Dexamethasone 8-24 mg PO/SC/IV qam depending on severity and cause of dyspnea. • Particularly for bronchial obstruction, lymphangitic, carcinomatosis, and SVC syndrome; also for bronchospasm, radiation pneumonitis and idiopathic interstitial pulmonary fibrosis.
5. Supplemental Oxygen	• Indicated only for hypoxia (insufficient evidence of benefit otherwise).[6]

Dyspnea Management Algorithm

Hyperlinks indicate additional information available in guideline sections above:
A = Assessment
M = Management
P = Pharmacological Treatment



Resources

References

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2. Schwartzstein RM, King TE, Hollingsworth H. Approach to the patient with dyspnea. UpToDate. 2009 Jan 1;17.1.
3. Membe SK, Farrah K. Pharmacological management of dyspnea in palliative cancer patients: Clinical review and guidelines. Health Technology Inquiry Service. Canadian Agency for Drugs & Technologies in Health. 2008 July.
4. Vozoris NT, Wang X, Fischer HD, et al. Incident opioid drug use and adverse respiratory outcomes among older adults with COPD. Eur Respir J 2016; 48: 683–693.
5. Qaseem A, Snow V, Shekelle P, et al. Evidence-based interventions to improve the palliative care of pain, dyspnea, and depression at the end of life: a clinical practice guideline from the American College of Physicians. Ann Intern Med. 2008;148(2):141-6.
6. Kobierski et al, "Dyspnea", Hospice Palliative Care Program Symptom Guidelines, Fraser Health Authority, 2006.
7. Fraser Health Authority. Hospice Palliative Care Symptom Guidelines – Dyspnea. 2009. Available at: http://www.fraserhealth.ca/media/Dyspnea.pdf.

Abbreviations

ABG	arterial blood gas
BNP	brain natiuretic peptide
CBC/diff	complete blood count and differential count
CT	computed tomography
ECG	electrocardiogram
IV	intravenous
PO	by mouth
SC	subcutaneous
SL	sublingual
SVC	superior vena cava

Appendices

Appendix A – Medications Used in Palliative Care for Dyspnea and Respiratory Secretions

For additional guidance on dyspnea, see also the **BC Inter-professional Palliative Symptom Management Guidelines** produced by the BC Centre for Palliative Care, available at: www.bc-cpc.ca/cpc/symptom-management-guidelines/

Appendix A: Medications Used in Palliative Care for Dyspnea and Respiratory Secretions

Tailor dose to each patient; those who are elderly, cachectic, debilitated or with renal or hepatic dysfunction may require reduced dosages; consult most current product monograph for this information: http://www.hc-sc.gc.ca/dhp-mps/prodpharma/databasdon/index-eng.php

OPIOIDS[A]						
Generic Name	Trade Name	Available Dosage Forms	Standard Adult Dose (opioid-naïve)[B]	Drug Plan Coverage[C]		Approx. cost per 30 days[D]
				Palliative Care	Fair PharmaCare	
hydromorphone	Dilaudid®, G	**IR tabs:** 1, 2, 4, 8 mg	0.5-1 mg PO q4h	Yes, LCA	Yes, LCA	$9–18 (G) $9–18
		Inj: 2 mg/mL	0.25-0.5 mg SC q4h	Yes	Yes	$1–2 per amp (2 mg/mL)
morphine	MS-IR®, Statex®	**IR tabs:** 5, 10, 20, 25, 30, 50 mg	2.5-5 mg PO q4h	Yes, LCA	Yes, LCA	$11–21
		Inj: 1, 2, 5, 10, 15, 25, 50 mg per mL	**Crisis dyspnea:** 5 mg IV/SC q5– 2.5-5 mg PO. Titrate to q4h 10 min. Double dose if no effect every third dose	Yes	Yes	$2 per amp (10 mg/mL)
oxycodone	Oxy IR®, Supeudol®, G IR tabs: 5, 10, 20 mg	**IR tabs:** 5, 10, 20 mg	2.5-5 mg PO. Titrate to q4h	Yes, LCA	Yes, LCA	$13–25 (G) $26–53

Morphine Equivalence Table (for chronic dosing)			
DRUG	**SC/IV (mg)**	**PO (mg)**	**COMMENTS**
morphine	10	30[A]	
hydromorphone	2	4	
oxycodone	not available in Canada	20	

[A] Health Canada recommends using a conversion of 10 mg SC/IV morphine = 30 mg PO (1:3) Refer to http://www.healthycanadians.gc.ca/recall-alert-rappel-avis/hc-sc/2010/14603a-eng.php

Generic Name	Trade Name	Available Dosage Forms	Standard Adult Dose	Drug Plan Coverage[C]		Approx. cost per 30 days[D]
				Palliative Care	Fair PharmaCare	
BENZODIAZEPINES						
lorazepam	Ativan®, G	**Tabs**: 0.5, 1, 2 mg	0.5-2 mg PO/ sublingual q2-4h PRN	Yes, LCA	Yes, LCA	$0.04–0.08 (G) $0.04–0.10 per tablet
		Sublingual tabs: 0.5, 1, 2 mg		Yes, LCA	Yes, LCA	$0.10–0.20 (G) $0.13–0.25 per tablet
		Inj: 4 mg per mL	0.5-2 mg SC[E] q2-4h PRN	Yes	Yes	$22.90 per 1 mL vial
midazolam	G	**Inj:** 1 mg per mL, 5 mg per mL	2.5-5 mg SC[E] q5-15 min prn	Yes, LCA	No	$0.84/mL (1 mg/mL vial) $4.43/mL (5 mg/ mL vial)
NEUROLEPTICS						
metho-trimeprazine	G	**Tabs:** 2, 5, 25, 50 mg	2.5-5 mg PO q8h, titrate to effect	Yes, LCA	Yes, LCA	$5–10 (G)
	Nozinan®	**Inj:** 25 mg/mL	6.25 mg SC q8h, titrate to effect	Yes	Yes	$3.74/amp (25 mg/mL)
CORTICOSTEROIDS						
dexamethasone	G	**Tabs:** 0.5, 0.75, 2, 4 mg	8-24 mg PO/SC[E]/IV every morning, taper if possible	Yes, LCA	Yes, LCA	$20–59 (G)
		Inj: 4, 10 mg per mL		Yes, LCA	Yes, LCA	$54–328 (G)
MEDICATIONS FOR RESPIRATORY SECRETIONS						
atropine	G	**Inj:** 0.4, 0.6 mg per mL	0.2-0.8 mg SC q4h and q1h PRN	Yes	Yes	$2.50–5 (G) per dose
		Drops: 1% solution	1 to 4 drops sublingual[E] q4h prn	No	Yes	$3.75 per 5 mL bottle
glycopyrrolate	G	**Inj:** 0.2 mg per mL	0.2-0.4 mg SC[E]/ sublingual[E]/PO[E] q4h to q8h	Yes	Yes	$26–52 (G) per 24 h

Abbreviations: G generics; **h** hour; **inj** injection; **IR** Immediate Release; **PO** by mouth; **PRN** as needed; **SC** subcutaneous; **SR** slow release; **tabs** tablets

[A] Not an exhaustive list. Other opioids may be appropriate.
[B] For opioid-tolerent patients, increase current dose by 25-50%.
[C] PharmaCare coverage as of October 2016 (subject to revision). Obtain current coverage, eligibility, and coverage information from the online BC PharmaCare Formulary Search page at pharmacareformularysearch.gov.bc.ca
[D] Cost as of October 2016 and does not include retail markups or pharmacy fees. Generic and brand name cost separated as indicated by (G).
[E] This route of administration is used in practice, but not approved for marketing for this indication by Health Canada