TREATMENT OF SELECTED UNDERLYING CAUSES OF BREATHLESSNESS

Bronchospasm

Although wheezes and/or rhonchi may be present, always look for intercostal retraction on examination (evidence of bronchoconstriction, increased inspiratory pressures). If bronchospasm is suspected, a clinical trial of bronchospasmolytics may be indicated (though careful consideration of the potential of b-adrenergic agents, e.g., albuterol, to cause adverse cardiac effects in patients with cardiac compromise). Frail patients may have difficulties using puffers, even with aerochambers. Nebulized aerosols may be more effective. If adequate doses are ineffective, discontinue therapy to minimize the number of medications, risk of adverse effects, and cost. Possible medications include:

- steroids to reduce swelling and inflammation
  - dexamethasone 2–20 mg PO, IV, SC q d (long half-life permits once-daily dosing; minimal glucocorticoid effects and edema)
- albuterol 2–3 puffs q 4–8h (with aerochamber) or albuterol 0.5% 2.5–5.0 mg diluted to 4.0 mL with saline by nebulizer q 4h
- ipratropium bromide 2–3 puffs q 4–8h prn or 0.125 mg q 4h via nebulizer
- theophylline and adrenergic agents may cause tremor and anxiety that will exacerbate dyspnea

Thick Secretions

Thick secretions can accumulate around tracheostomy appliances and in airways of patients with obstruction or bronchospasm or those who are weak/frail. To minimize secretion buildup, maintain best possible hydration of the patient, keep mucous membranes moist, and increase humidity of inspired air (be careful not to increase risk of respiratory infections). If cough reflex is strong, loosen secretions with nebulized saline and guaifenesin. If cough reflex is weak, dry secretions with:

- scopolamine 0.1–0.4 mg SC, IV q 4h or 1–3 transdermal patches q 72h or 10–80 mg/h by continuous IV or SC infusion
- glycopyrrolate 0.4–1.0 mg q d by SC infusion or 0.2 mg SC, IV q 4–6h prn
- hyoscyamine 0.125 mg po or sl q 8h

Pleural Effusion

Pleural effusions can reduce lung volume considerably and cause great distress. Thoracentesis may be effective if fluids are not loculated. If the effusion continues to recur and thoracentesis is ineffective, consider talc, tetracycline, or bleomycin pleurodesis or Tenckhoff catheter insertion to facilitate repeat drainage (drainage can be done at home by visiting nurse).

Anemia

Selected patients who are anemic and breathless may benefit from a blood transfusion. A clinical trial is suggested. Transfuse to a hemoglobin level greater than 10 g/dL and evaluate over several days (there is an initial placebo effect). If the patient experiences a sustained increase in his or her energy and/or reduced breathlessness, consider following the CBC and transfuse as needed. If there is no benefit, do not follow the CBC or repeat transfusion. If the patient has a life expectancy of months or more, consider epoetin alfa 10,000 IU SC 3 times per week (onset of effect takes 4 weeks). Double the dose if the hemoglobin does not increase more than 1 g/dL within 4 weeks.

Airway Obstruction

Airway obstruction can cause considerable distress. High-pitched inspiratory stridor is often audible at a distance. Make sure tracheostomy appliances are cleaned regularly. If the patient is still eating and
aspiration is likely, puree solids, thicken liquids with cornstarch or other thickeners, and instruct family members and caregivers on positioning during feeding and suctioning. Surgical management or radiation therapy may be appropriate. Possible medications include:

- steroids to reduce swelling and inflammation
  - dexamethasone 2–20 mg PO, IV, SC q d (long half-life permits once-daily dosing; minimal mineralocorticoid effect or edema)
- manage thick secretion
- racemic epinephrine by inhaler
- oxygen mixed with helium

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