
ASTHMA AND COPD

Preoperative evaluation

- Assess for COPD: increases risk of pulmonary complications (PNA, atelectasis, respiratory failure, and COPD exacerbation—relative risk 2.7-4.7).¹
- Mild to moderate asthma has not been shown to pose a significant perioperative pulmonary risk.²
- Delay purely elective surgery for patients with acute exacerbations of asthma or COPD.
- For patients with known asthma or COPD, routine preoperative PFTs are not necessary—history and exam can assess severity.
- Recommend smoking cessation.
- Consider ABG if patient is suspected to have baseline CO₂ retention.

Postoperative management

- Scheduled nebulizers with albuterol and ipratropium if COPD.
- For active exacerbations requiring corticosteroids, discuss with surgical team—may impair wound healing. Assess for and treat hyperglycemia.

Discussion

PFTs. Lower baseline FEV₁s may in fact confer a higher surgical risk, but it is unclear whether preoperative testing will change outcomes, risk stratification, or decision making in patients undergoing noncardiothoracic surgery.

Perioperative beta-blockers.

COPD: A systematic review³ demonstrated that patients with COPD who receive beta blockers had no difference in symptoms or FEV₁, even in patients with severe COPD (FEV₁ <50%) and in patients with a positive bronchodilator response. However, in patients with even more severe COPD, or those with a history of previous adverse reactions even to cardioselective beta blockers, the risk of COPD exacerbation must be weighed against the potential benefit of perioperative beta blockade.

Asthma: Another systematic review⁴ found no significant difference between cardioselective beta blockers and placebo in patients with mild to moderate reactive airways disease—this included both COPD and asthma. However, there has been no systematic review of the patient with asthma alone, nor of patients with severe asthma.

For beta blockers strictly given for *perioperative* reasons, there is insufficient data—however, there are relatively few indications currently for perioperative beta blockers (See “**Perioperative Beta Blockers**”).

Preoperative medical optimization. It is uncertain whether optimization using ipratropium, albuterol, steroids, smoking cessation, or antibiotics improves surgical outcomes. For COPD, studies widely cited showing benefit are from the early 1970s and have not been repeated.¹ It is reasonable however, to treat using these agents if they would be used based on the patient’s condition regardless of surgery.

References

1. Smetana GW. Preoperative pulmonary evaluation. *N Engl J Med.* 1999;340:937-944.
2. Qaseem A, Snow V, Fitterman N, et al. Risk Assessment for and Strategies To Reduce Perioperative Pulmonary Complications for Patients Undergoing Noncardiothoracic Surgery: A Guideline from the American College of Physicians. *Annals of Internal Medicine.* 2006;144:575-580.
3. Salpeter S, Ormiston T, Salpeter E. Cardioselective beta-blockers for chronic obstructive pulmonary disease. *Cochrane Database Syst Rev.* 2005; (4):CD003566.
4. Salpeter S, Ormiston T, Salpeter E. Cardioselective beta-blockers for reversible airway disease. *Cochrane Database Syst Rev.* 2002; (4):CD002992.