

## PERIOPERATIVE PULMONARY RISK ASSESSMENT

Although much attention is paid to cardiovascular risk assessment, postoperative pulmonary complications are more common than cardiac complications.

A guideline from the ACP recommends<sup>1</sup>:

1. Assessment for the following risk factors: COPD, age >60, ASA class II+, functionally dependent, and CHF.
2. Measurement of serum albumin for patients with risk factors or suspicion of having hypoalbuminemia.
3. Postoperative lung expansion maneuvers (e.g. incentive spirometry).
4. Selective use of NG tubes for decompression for nausea, vomiting, abdominal distension. (see comment below)

- In addition, they discourage use of routine chest x-rays and PFTs.
- Surprisingly, obesity and mild-moderate asthma were not found to be risk factors for postoperative pulmonary complications.

### Comment:

In our practice, the use of PFTs is most useful for the patient with suspected but previously undiagnosed obstructive lung disease. For a patient with known COPD, we generally assess their symptoms and clinical exam. Note that for certain types of surgeries, preoperative PFTs are part of the standard evaluation (e.g. thoracic surgery, bariatric surgery) and we usually defer this testing to the surgeon.

Consider a baseline ABG for patients with elevated serum HCO<sub>3</sub>, O<sub>2</sub> dependence, moderate to severe COPD, or suspected obesity-hypoventilation syndrome.

While a low serum albumin (<3.6 g/dl) has been found to be a predictor of postoperative complications, for most of our patients it is unclear how this finding will change management with regard purely to pulmonary complications. Often surgeons are highly attentive to nutritional status for other reasons (overall morbidity, mortality, wound healing, etc.) and will delay surgery for those reasons.

With regard to the guideline for NG tube decompression, we almost always defer this to the surgery team. For many patients, a new anastomosis (e.g. esophageal surgery) makes NG tube placement potentially dangerous—before recommending this, always discuss with the surgical team.

Smoking cessation likely has some benefit if done 6-8 weeks or greater prior to surgery.

There is no consensus as to when to obtain a preoperative chest x-ray. Guidelines differ as to an age cutoff for which a CXR would be helpful. Guidelines from 2006 state that a preoperative CXR may be helpful in patients >50 year of age who are undergoing upper abdominal thoracic, or AAA surgery, or in patients with cardiac or pulmonary disease. In our experience, a preoperative CXR rarely changes management dramatically, but may be very useful in these select populations.

Obstructive sleep apnea (OSA)—see “**Obstructive Sleep Apnea.**”

### References

1. 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.