Obesity Hypoventilation Syndrome is Associated with Serious Postoperative Respiratory Complications

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Hypercapnia was a marker for postop respiratory failure.

Although obstructive sleep apnea (OSA) usually is recognized, obesity hypoventilation syndrome (OHS) remains underdiagnosed. Distinguishing between the two disorders is important: Patients with OSA are treated with continuous positive airway pressure (CPAP) to stent open the upper airway, whereas patients with OHS require bilevel noninvasive positive pressure to support ventilation. Appropriate perioperative management of these distinct conditions might prevent postoperative complications.

Using a single-center database, investigators examined noncardiac surgery patients with body-mass index (BMI) >30 kg/m2, OSA diagnosed by polysomnography, and hypercapnia identified by arterial blood gas measurement on two occasions. Patients were categorized as having OHS if pulmonary function tests were available and showed no other lung disease (e.g., chronic obstructive pulmonary disease); 81 patients with definite OHS and 77 patients with probable OHS were compared with 325 patients with OSA alone.

Patients with known or suspected OHS were significantly more likely than patients with OSA alone to experience postoperative respiratory failure (21% vs. 2%; adjusted odds ratio, 11), be transferred to the intensive care unit (ICU; 21% vs. 6%; AOR, 11), and have longer ICU and hospital lengths of stay. Risks for these complications were associated with presence of hypercapnia but not with BMI or apnea-hypopnea index.

Comment: Given the association between OHS and elevated risk for serious postoperative complications, looking for hypercapnia in obese preoperative patients with OSA would be prudent. I agree with the authors in recommending preoperative serum bicarbonate assessment, with subsequent arterial carbon dioxide measurement if bicarbonate levels are >27 mEq/L (this cutoff is highly sensitive, although nonspecific, for OHS). Prospective identification of OHS allows planning for perioperative management strategies to minimize complications.

Citation(s):

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