

Obstructive Sleep Apnea in Perioperative Period

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It is estimated that among middle age adults the prevalence of OSA is about 4% to 2% for men and women, respectively [1-2]. It is projected that 80 to 90 % of patients with OSA are undiagnosed [3]. We are identifying more OSA patients with increase testing every year and therefore diagnosis of OSA will increase by several folds over the next decade. Up to 90% of adult patients with OSA are obese [4]. According to the most recent projections, it is anticipated that by 2030, more than half of the US population are likely to be obese and 86.3% is likely to be overweight or obese [5]. Therefore it is logical to assume that OSA is going to be a major epidemic problem in the next decade.

AHI is a commonly used index of OSA severity that accounts for apneas and hypopneas, which must last for at least 10 seconds and are associated with a decrease in blood oxygenation (5-15 episodes/hr = Mild; 15-30 episodes/hr = Moderate; and >30 episodes/h=Severe) [6]. Increasing age, male gender, structural abnormalities, tensile hypertrophy, nasal pathology, alcohol, smoking and family history are additional risk factors for OSA [7]. The patho-physiology of obese OSA patient relates to a change in the structural and functional characteristics of the pharyngeal anatomy [8-9]. Fat deposits in the pharyngeal and soft tissue of mouth contribute to narrowing of the airways. This narrowing may also result from mucosal edema mainly in the lateral pharyngeal wall, secondary to vibration trauma related to snoring, vascular congestion, pulmonary hypertension related to hypoxia and the inflammatory status related to obesity [10-11]. OSA is usually suspected in obese patient with history of snoring and sleeping problems [12]. Physical examination may help to identify OSA patients [13]. However, rapid diagnostic tools are needed for preoperative stratification and preparation. Recently, the American society of anesthesiology has published guidelines for the perioperative management of OSA patients [14]. Additionally, several other screening tools are available to help clinicians to identify OSA patients. They include Flemons criteria used by sleep physicians to evaluate patients undergoing evaluation for sleep apnea in the outpatient setting, the Flemons criteria have a sensitivity of 76% and a positive predictive value of 77% [15]. The Epworth Sleepiness Scale to measure sleepiness. The Berlin questionnaire is currently one of the most widely used tool to detect OSA [16]. An alternative scoring model combining the STOP questionnaire and BANG (BMI, age, neck circumference and sex/gender) score has improved sensitivities of the apnea-hypopnea index [17]. Nocturnal PSG is the gold standard test to diagnose OSA patients but not quickly available in the perioperative setting [18].

Despite all efforts to decrease perioperative complications, OSA patients are at increased risk for respiratory complications, difficult intubation, cardiac arrhythmia and prolong length of stay in hospitals. The biggest challenge is to identify OSA patients and provide consistent guidelines to clinicians for perioperative management.

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