Perioperative screening for obstructive sleep apnoea and treatment outcomes: where are the data?

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Perioperative obstructive sleep apnoea screening: how should it be evaluated? <http://ow.ly/105cGT>

Obstructive sleep apnoea (OSA) is common illness found worldwide, with a reported prevalence ranging from 9% to 24% among the general population [1]. In the USA, approximately 92% of women and 82% of men with moderate-to-severe OSA remain undiagnosed [2]. OSA carries several short- and long-term health consequences. These may range from perioperative complications to the risk of having uncontrolled hypertension, stroke, coronary artery disease and dysrhythmias, to name a few [3–8].

Obesity is, by far, one of the key risk factors for the development of OSA. With an epidemic increase in the prevalence of obesity, OSA has concomitantly been rising. Numerous studies have reported some of the perioperative complications of patients that suffer from OSA [4, 9, 10]. For example, patients with pre-existing OSA have higher post-operative reintubation rates [11]. They may have prolonged episodes of low oxygen saturation, cardiac complications including ischaemia and dysrhythmias, unplanned admissions to the intensive care unit (ICU) and prolonged hospitalisation [9]. In a recent meta-analysis of 13 studies that included a total of 3942 patients, KAW *et al.* [11] found that patients with OSA have a higher incidence of acute respiratory failure, post-operative drops in oxygen saturation, cardiac events, prolonged hospitalisation and ICU stay. In a similar analysis of 15 studies, GADDAM *et al.* [12] found similar results.

The prevalence of OSA is even higher among the surgical population. More than 40 million surgical procedures are performed each year in the USA alone. It has been estimated that 23% of patients undergoing general surgical procedures, and as many as 70% of patients undergoing bariatric surgery, have OSA [13, 14]. A major issue is that at least 80% of surgical patients are unaware of their OSA diagnosis, which places them at even higher risk of unexpected perioperative complications [13].

Because of these concerns, the American Society of Anesthesiologists (ASA) established guidelines, in 2014, promoting a systematic approach to screening, managing and treating patients with OSA [15]. Despite adequate emphasis by several societies, including the ASA, less than 25% of hospitals in the USA and Canada have policies adopting these guidelines [16]. Screening tools for OSA vary from institution to institution. Validated tools such as the ASA checklist, STOP-BANG questionnaires, Berlin questionnaires and NAMES (neck circumference, airway classification, comorbidities, Epworth scale and snoring) criteria have been implemented in some facilities [17, 18]. The STOP-BANG questionnaire has been used widely in some institutions, mostly due to its ease of use, and the ASA checklist has been part of the preoperative anaesthesia assessment [3, 6, 17].

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The ASA guidelines promote the use of continuous positive airway pressure (CPAP) devices as well as other noninvasive ventilation modes [15]. ABDELSATTAR *et al.* [19] found the perioperative complication rate to be 6.4% in patients who had OSA that were not treated with CPAP, as compared with 4.2% in those who were treated (4.9% in patients who were not suspected to have OSA).

In this issue of the *European Respiratory Journal*, DWARAKANATH *et al.* [20] address the prevalence and treatment outcomes for patients with OSA who were identified by preoperative screening, as compared with clinician referrals. In this study, the authors combined retrospective and prospective sleep study data, subjective sleepiness scores and CPAP compliance. Patients in this study were followed up by telephone and had an annual follow-up in the clinic. Interestingly, these authors found the prevalence of OSA to be similar between preoperative screening and referral from other clinicians.

The study has some limitations, including the fact that it had a portion that was retrospective. They used a nonvalidated screening questionnaire, which lacked additional filters regarding referrals for sleep studies in those patients who had a positive preoperative screening test for OSA. In addition, the surgical outcomes were not measured. However, this study raises an important clinical question regarding follow-up of patients who are found to have positive screening for OSA preoperatively. It would be interesting to find out if these individuals underwent diagnostic testing, if they were treated and if they were compliant with the treatment device.

As mentioned, the available literature and published guidelines focus primarily on implementation of preoperative screening for OSA. There is a tremendous lack of data and guidelines as to what to do for patients after their surgical interventions have been carried out. Should these patients be followed up by their primary physicians who are extremely busy and short staffed to confirm the diagnosis of OSA? Should they receive a direct referral to a sleep specialist from the clinician completing the preoperative assessment? The jury is out as to who should be the referring doctor for these patients. Clearly prospective studies addressing these issues need to be designed and implemented.

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