Recommendations for screening and management of Sleep Disordered Breathing (SDB) in patients undergoing bariatric surgery

Obstructive Sleep Apnoea (OSA) and the Obesity Hypoventilation Syndrome (OHS) are common in the Bariatric Surgical population, occurring in 30-50% of patients, especially amongst larger males.
Significant OSA/OHS, particularly if undiagnosed or inadequately treated, increases the risk of post-operative respiratory depression and may be associated with pulmonary hypertension and heart failure. Identification and treatment of SDB is likely to reduce peri-operative risk and improve cardiac function.

In 2013 the ASA updated their document "Practice Guidelines for the Perioperative Management of Patients with Obstructive Sleep Apnea" but this document specifically excluded those obese patients without proven diagnosis OSA.

This guideline attempts to fill that gap by providing recommendations on how to screen the obese patient for SDB and who to refer for formal sleep study.

1. A formal screening tool should be used to identify low-risk patients who are very unlikely to have significant sleep apnoea. The STOP-BANG questionnaire is the most sensitive at identifying patient with significant sleep apnoea. Patients scoring two or less need not be investigated further for OSA.
2. The Epworth Sleepiness score is not useful as a screening tool as many patients with significant OSA/OHS do not score highly on measures of daytime drowsiness.
3. All morbidly obese patients with ASA >2, or who score four or more on a formal screening tool, should be pre-operatively assessed by a clinician with an interest and expertise in obesity peri-operative medicine. This can be an anaesthetist, bariatric physician or a sleep physician. That specialist will take into account airway and neck anatomy and risk from other co-morbidities in deciding how to stratify individual patient risk.

RED GROUP - HIGH RISK OF RESPIRATORY COMPLICATIONS

4. All patients with STOP-BANG scores of 6 or greater should be referred for sleep study.
5. Patients with any signs and symptoms of sleep apnoea and significantly impaired exercise tolerance (NYHA ≥Grade 3 dyspnoea, unable to climb a flight of stairs without stopping) should be referred for overnight oximetry screening. The benefits of six weeks of successful CPAP therapy are unproven but are likely to reduce a significant peri-operative mortality risk.
6. Patients with proven sleep apnoea, but unable to tolerate CPAP treatment, should be considered for re-referral and re-evaluation of their CPAP treatment. If, despite further review, they remain non-compliant then they should be managed as a very high-risk patient throughout their peri-operative course. Patients who do not report any improvement in symptoms despite apparent compliance with CPAP should be similarly treated. Both these groups should be managed with continuous observation and availability of frequent arterial CO_2 analysis, which will usually imply arterial line monitoring in an HDU environment

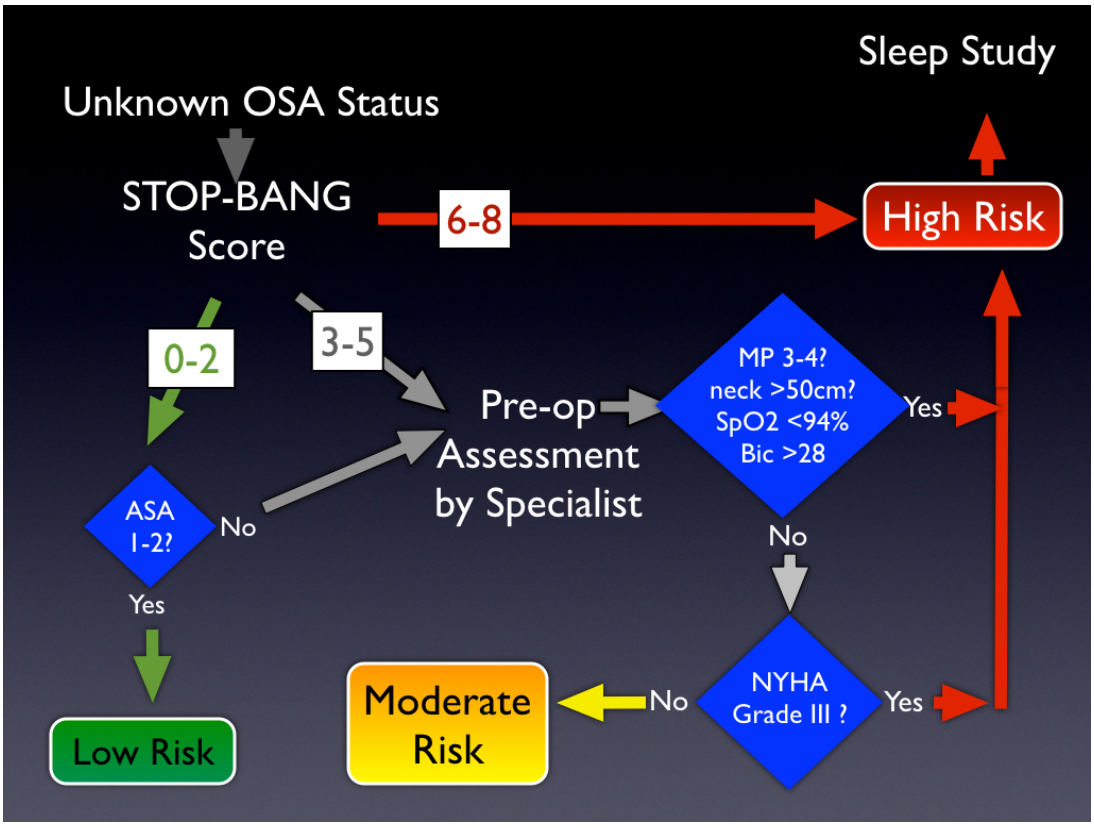
AMBER GROUP - MODERATE RISK OF RESPIRATORY DEPRESSION

7. Patients with some symptoms but felt unlikely to have significant sleep apnoea, and with reasonable exercise tolerance (therefore unlikely to benefit from the cardiac improvement effects of pre-operative CPAP), should be managed peri-operatively with a limited opioid strategy and a higher level of monitoring.
8. Patients without symptoms of OSA but with Mallampati scores >2 or with other anatomical features associated with reduced upper airway calibre; or with unexpected higher levels of intubation grade or airway difficulty at the time of anaesthesia should ideally be managed with a limited opioid anaesthetic strategy and a higher level of post-op monitoring.

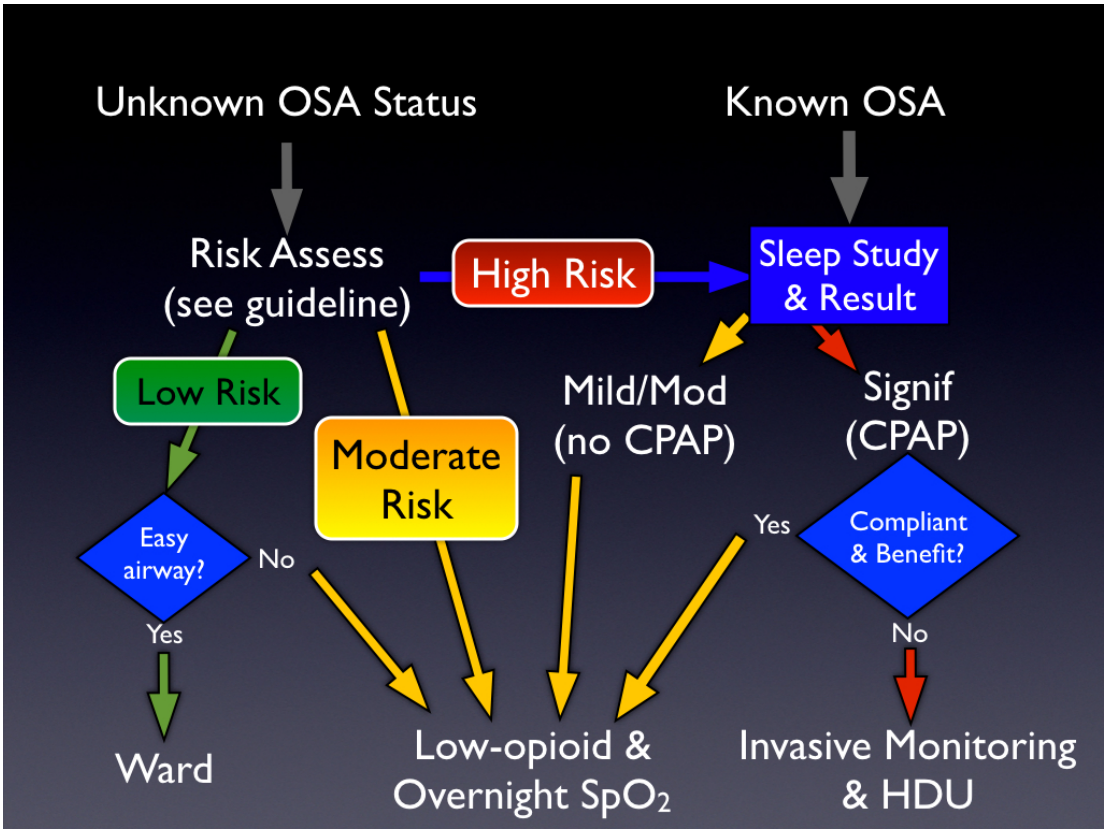
GREEN GROUP - LOW RISK OF COMPLICATIONS

9. Patients who have low risk on screening with good exercise tolerance and with no anatomical features of difficult airway can be managed on a normal ward in accordance with routine local guidelines for post-op patients.

1 - OSA Screening Algorithm for the Obese Patient



2 - OSA Management algorithm for the Obese Patient



APPENDIX – 1

STOP-BANG Score

One point is given for each of the following;

1. Do you **S**nore loudly (loud enough to be heard through closed doors) ?
2. Do you often feel **T**ired, fatigued, or sleepy during daytime?
3. Has anyone **O**bserved you stop breathing during your sleep?
4. Do you have or are you being treated for high blood **P**ressure?
5. **B**MI > 35 kg/m_2?
6. **A**ge > 50 yr old?
7. **N**eck circumference > 40 cm?
8. **G**ender male?

scores of ≥ 3 implies significant risk of OSA

scores of ≥ 6 implies very high likelihood of OSA