

ANAESTHESIA FOR THE OBESE PATIENT: BMI > 35KG/M²

Preoperative Evaluation

S	Snoring: Do you snore loudly (louder than talking or heard through a closed door)?	
T	Tired: Do you often feel tired fatigued or sleepy during the daytime?	
O	Observed: Has anyone observed you stop breathing during your sleep?	
P	Blood Pressure: Do you have or are being treated for high blood pressure	
B	BMI: BMI > 35kg/m ²	
A	Age: Age > 50	
N	Neck: Neck circumference > 40cm (16 inches)	
G	Gender: Male	

Any of:
 Poor functional capacity
 Abnormal ECG
 Uncontrolled BP/IHD
 SpO₂ <94% on air
 If Bicarb > 28 OHS Likely
 Previous DVT/PE
 STOP-BANG>5

Yes

No

Consider:
 Blood gases/Sleep Studies
 Preoperative CPAP
 Echocardiogram
 Cardiorespiratory referral

Need experienced anaesthetic team
 If major surgery consider HDU

Maybe suitable as Day case surgery
 SEE BELOW

Central Obesity (waist > half height)
 Difficult airway /Ventilation problems more likely
 Greater risk of CVS disease, thrombosis
 ↑Risk of Metabolic syndrome:
 Central Obesity plus Hypertension
 Dyslipidaemia, Insulin resistance

Apple Body Shape vs. Pear Shape Body

Peripheral Obesity
 (Fat outside body cavity)
 Less co-morbidity

Intra Operative Management

Suggested Equipment
 Suitable bed/trolley & operating table
 Gel padding, wide strapping, table extensions/arm boards
 Forearm cuff or large BP cuff
 Ramping device, step for anaesthetist, difficult airway equipment, ventilator capable of PEEP and pressure modes. Hover mattress or equivalent.
 Long spinal, regional and vascular needles.
 Ultrasound machine.
 Depth of anaesthesia and neuromuscular monitoring.
 Enough staff to move patient.

Ramping
 Ear level with sternum. Reduces risk of difficult laryngoscopy, improves ventilation.

Anaesthetic Technique
 Consider premed antacid & analgesia, careful glucose control & DVT prophylaxis.
 Self-position on operating table.
 Preoxygenate & intubate in ramped position +/- CPAP. Minimize induction to ventilation interval to avoid desaturation. Commence maintenance anaesthesia promptly.
 Tracheal intubation is recommended.
 Avoid spontaneous ventilation. Use PEEP.
 Use short-acting agents e.g. desflurane or propofol infusion, short-acting opioids, multimodal analgesia. PONV prophylaxis.
 Ensure full NMB reversal.
Extubate and recover in head up position.

Drug dosing- what weight to use?
Induction agents: titrate to cardiac output- this equates to lean body weight in a fit patient.
Competitive muscle relaxants: use lean body weight.
Suxamethonium use total body weight
Neostigmine: Increase dose. Measure response
Opioids: Use Lean body weight. Care with obstructive apnoea!
TCI propofol: IBW plus 40% excess weight
If in doubt, titrate and monitor effect!
Lean Body Weight this exceeds Ideal body weight in the obese and plateaus ≈100kg for a man, ≈70kg for a woman.
Ideal Body Weight in Kg - Broca formula
 Men: height in cm minus 100 Women: height in cm minus 105

Suggested dosing regimes for anaesthetic drugs	
Lean Body Weight	Adjusted Body Weight
Up to Max-Males 100kg Females 70kg	Ideal plus 40% excess
Propofol induction	Propofol Infusion
Thiopentone	Alfentanil
Fentanyl	Neostigmine (max 5mg)
Rocuronium	Sugammadex (see package insert)
Atracurium	Antibiotics
Vecuronium	Low Molecular weight Heparin
Morphine	
Paracetamol	
Bupivacaine	
Lidocaine	

Post Operative Management

PACU discharge: Usual discharge criteria should be met. In addition, SpO₂ should be maintained at pre-op levels with minimal O₂ therapy, without evidence of hypoventilation.
OSA or Obesity Hypoventilation Syndrome: Sit up. Avoid sedatives and post-op opioids. Reinstate CPAP if using it pre-op. Additional time in recovery is recommended, only discharge to the ward if free of apnoeas without stimulation. Patients untreated or intolerant of CPAP who require postoperative opioids are at risk of hypoventilation and require continuous oxygen saturation monitoring. Level 2 care is recommended. Effective CPAP reduces this risk to near normal.
Ward care: Escalation to Level 1, 2 or 3 care may be required based on patient co-morbidity, the type of surgery undertaken and issues with hypoventilation discussed above. General ward care includes: multimodal analgesia, caution with long-acting opioids and sedatives, early mobilisation and extended thromboprophylaxis.

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