

2-7 Tachycardia v.1

Tachycardia in theatre is often due to inadequate depth of anaesthesia / analgesia or alternatively a reflex to hypotension. Tachycardia should not be treated as an isolated variable: remember to tailor treatment to the patient and the situation. Follow the full steps to exclude a serious underlying problem.

START

- 1 Immediate action:** Stop any stimulus, Check pulse, rhythm and blood pressure:
 - If no pulse or impending arrest: use Box A.
 - If narrow complex AND not hypotensive first increase depth of anaesthesia/analgesia.
- 2 Adequate oxygen delivery**
 - Check fresh gas flow for circuit in use AND check measured F_iO_2 .
 - Visual inspection of entire breathing system including valves and connections.
 - Rapidly confirm reservoir bag moving OR ventilator bellows moving.
- 3 Airway**
 - Check position of airway device and listen for noise (including larynx and stomach).
 - Check capnogram shape compatible with patent airway.
 - Confirm airway device is patent (consider passing suction catheter).
- 4 Breathing**
 - Check chest symmetry, rate, breath sounds, SpO_2 , measured VT_{exp} , $ETCO_2$.
 - Feel the airway pressure using reservoir bag and APL valve <3 breaths.
- 5 Circulation**
 - Check rate, rhythm, perfusion, recheck blood pressure, obtain 12-lead ECG if possible.
- 6 Consider underlying problems (Box B).**
- 7 Consider rate control (Box C).**
- 8 Call for help;** consider electrical cardioversion (Box D) if problem not resolving quickly.
- 9 Depth:** Consider current depth of anaesthesia AND adequacy of analgesia.

Box A: CRITICAL TACHYCARDIA

If no pulse, delegate one person (minimum) to chest compressions and → **2-1 Cardiac arrest**.
If hypotension worsening or impending arrest, consider electrical cardioversion (Box D).

Box B: POTENTIAL UNDERLYING PROBLEMS

- Stimulation with inadequate depth.
- Consider drug error.
- Also consider: central line/wire; hypovolaemia; primary cardiac arrhythmia; myocardial infarction; electrolyte disturbance; local anaesthetic toxicity (→ **3-10**); sepsis (→ **3-14**); circulatory embolus, gas/fat/amniotic (→ **3-5**); anaphylaxis (→ **3-1**); malignant hyperthermia crisis (→ **3-8**)

Box C: DRUGS FOR TACHYCARDIA

- Fluid bolus 10 ml.kg^{-1} (adult 250 ml)
- Magnesium 50 mg.kg^{-1} (adult 2 g) over >10 min, max conc. 200 mg.ml^{-1}
- Amiodarone 5 mg.kg^{-1} (adult 300 mg) over >3 min, NOT in polymorphic VT
- Labetalol 0.5 mg.kg^{-1} (adult 25-50 mg), repeat when necessary
- Esmolol 0.5 mg.kg^{-1} (adult 25-50 mg)
- Adenosine 0.1 to 0.5 mg.kg^{-1} (Adult 3 to 18 mg) – for SVT

Box D: ELECTRICAL CARIOVERSION

- Attach pads and ECG from defibrillator.
- Ensure adequate depth / sedation / analgesia for cardioversion.
- Engage synchronisation and check for sync spikes on R-waves.
- Start with 1 J.kg^{-1} (adult 50-100 J) biphasic.
- Remember to hold shock button until sync shock delivered.