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| 2-5 Hypertension v.1 |
| Hypertension is most commonly due to inappropriate depth of anaesthesia or inadequate analgesia.You should rapidly exclude a problem in adequate oxygen delivery, airway and breathing first. |

 START.

❶ **Immediate actions**

* Recheck blood pressure AND increase anaesthesia AND reduce stimulus.

❷ **Adequate oxygen delivery**

* Check fresh gas flow for circuit in use AND check measured FiO2.
* Visual inspection of entire breathing system including valves and connections.
* Rapidly confirm reservoir bag moving OR ventilator bellows moving.

❸ **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).

❹ **Breathing** - exclude **hypoxia** and **hypercarbia** as causes:

* Check chest symmetry, rate, breath sounds, SpO2, measured VTexp, ETCO2.
* Feel the airway pressure using reservoir bag and APL valve <3 breaths.

❺ **Circulation**

* Check rate, rhythm, perfusion; increase frequency of BP check.
* Check cuff size and location, consider intra-arterial monitoring.

❻ **Depth**

* Ensure adequate depth of anaesthesia and analgesia.

❼ Consider underlying problem (Box B).

❽ Call for help and consider temporising drug (Box C) if problem not resolving.

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| Box A: CRITICAL CHANGES |
| If problem worsens significantly or a new problem arises, call for help and go back to START of 1-1 Key Basic Plan. |

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| BOX B: POTENTIAL UNDERLYING PROBLEMS |
| * Inadequate anaesthesia / analgesia (alfentanil can be diagnostic – see Box C for dose)
* Inadequate neuromuscular blockade
* Consider whether you could have made a drug error
* Omission of usual antihypertensives
* Distended bladder
* Vasopressor administered by surgeon
* Surgical tourniquet
* Excess fluid (over-administration / overload / TURP syndrome)
* Medical causes: drug interaction, renal failure, raised intracranial pressure, seizure, thyrotoxicosis, phaeochromocytoma
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| BOX C: TEMPORISING DRUGS FOR HYPERTENSION |
| * Alfentanil 10 µg.kg-1 (adult 0.5-1 mg)
* Propofol 1 mg.kg-1 (adult 50-100 mg)
* Labetolol 0.5 mg.kg-1 (adult 25-50mg). Repeat when necessary.
* Esmolol 0.5 mg.kg-1 (adult 25-50mg) Follow with infusion.
* Hydralazine 0.1 mg.kg-1 (adult 5-10mg)
* Glyceryl trinitrate 0.5-5 µg.kg.min-1 infusion (adult 2-20 ml.hr-1 of 1 mg.ml-1 solution)
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