H Bombs

REFERENCE

WHAT IT IS

- Mercy's name, in the head injury guideline, for the insults that cause secondary brain injury: 'Control for H-BOMBS' (guidelines p.83; pediatric p.136)
- The guideline spells out the H's to control: hypotension, hypoxia, hypercapnia, and hypocapnia
- The injured brain cannot compensate — each of these drops cerebral perfusion or oxygen delivery and worsens outcome

RECOGNIZE IT

- Any head-injured patient who becomes hypotensive or hypoxic, even briefly
- Ventilation drifting either way: too slow (hypercapnia) or bagging too fast (hypocapnia)
- Herniation warnings: GCS drop of two or more, unequal pupils, posturing (guideline p.83)

WHAT TO DO

- No permissive hypotension in head injury — the guideline reserves that for trauma other than head injuries; defend the blood pressure
- Keep oxygenation up: ventilate early with iGel or BVM as indicated and monitor continuously
- Ventilate to an EtCO2 of 35–40 mmHg — neither hypercapnia nor hypocapnia (guideline p.83)
- Consider 30° head elevation when there is no other spine trauma
- Re-evaluate frequently, keep scene time short, and transport rapidly to the appropriate facility

PEARLS

- In head injury, the second hit is the one you control: pressure, oxygen, and CO2 are the treatment
- Capnography is not optional here — you cannot hold EtCO2 35–40 by feel

Take Home Message:

In head injury, control the H-bombs — hypotension, hypoxia, hypercapnia, hypocapnia — because secondary brain injury is the injury you can prevent.