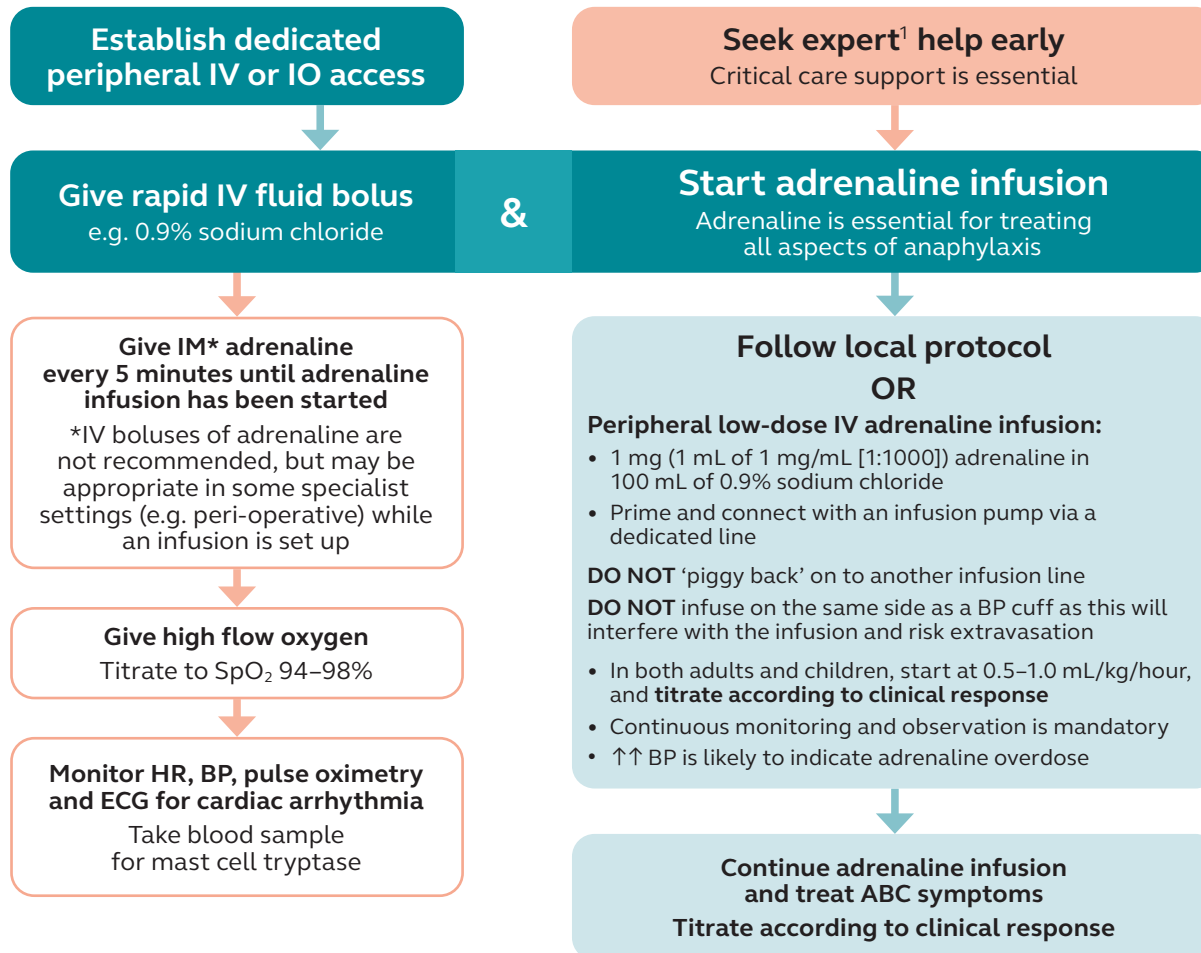


# Refractory anaphylaxis

No improvement in respiratory or cardiovascular symptoms despite 2 appropriate doses of intramuscular adrenaline



**A = Airway**

**Partial upper airway obstruction/stridor:**

Nebulised adrenaline (5mL of 1mg/mL)

**Total upper airway obstruction:**

Expert help needed, follow difficult airway algorithm

**B = Breathing**

**Oxygenation is more important than intubation**

**If apnoeic:**

- Bag mask ventilation
- Consider tracheal intubation

**Severe/persistent bronchospasm:**

- Nebulised salbutamol and ipratropium with oxygen
- Consider IV bolus and/or infusion of salbutamol or aminophylline
- Inhalational anaesthesia

**C = Circulation**

**Give further fluid boluses and titrate to response:**

Child 10 mL/kg per bolus

Adult 500–1000 mL per bolus

- Use glucose-free crystalloid (e.g. Hartmann's Solution, Plasma-Lyte®)

Large volumes may be required (e.g. 3–5 L in adults)

**Place arterial cannula for continuous BP monitoring**

**Establish central venous access**

**IF REFRACTORY TO ADRENALINE INFUSION**

Consider adding a second vasopressor in addition to adrenaline infusion:

- Noradrenaline, vasopressin or metaraminol
- In patients on beta-blockers, consider glucagon

**Consider extracorporeal life support**

**Cardiac arrest – follow ALS ALGORITHM**

- Start chest compressions early
- Use IV or IO adrenaline bolus (cardiac arrest protocol)
- Aggressive fluid resuscitation
- Consider prolonged resuscitation/extracorporeal CPR

<sup>1</sup>Intravenous adrenaline for anaphylaxis to be given only by experienced specialists in an appropriate setting.