Post Cardiac Arrest Care

Refer EARLY to KIDSNTS for advice - 0300 200 1100

Indication:

> 1minute cardiopulmonary resuscitation
AND

Requires mechanical ventilation
AND

Remains comatose following cardiac arrest (excluding anaesthetic, neuromuscular blockade)

Contraindications:

Children with Advanced Care Plans where the agreed plan is different to the post cardiac arrest guideline
OR
Consultant in charge of care believes continued, aggressive neuro-critical care is not appropriate,

OR
Patients with a diagnosis of brain death.

Therapeutic goal: To manage complications of Post Cardiac Arrest Syndrome:

1) Investigate and prevent further cardiac arrest.
2) Brain injury – deliver neuro-protective strategies.
3) Myocardial stunning/dysfunction (peaks at approx. 8 hours) – circulatory support, optimise electrolytes.
4) Systemic ischaemia/reperfusion injury – organ support.

Airway/ Breathing

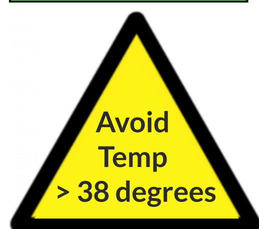
- Continuous monitoring oxygen saturations and capnography.
- Early intubation and ventilation – cuffed ETT if able. CXR to confirm ETT position.
- Target oxygen saturations 94-98% (avoid hypoxia) and pCO2 4.5 – 5.5 kPa (ETCO2may be unreliable).
- Blood gas (ideally arterial). Manage acidosis.

Circulation

- Monitor heart rate, BP, perfusion, serum lactate and urine output.
- FBC and clotting profile - correct coagulopathy if present.
- Perform 12 lead ECG and focused echocardiogram if able.
- **Target normal BP for age** (>5th centile; invasive arterial if possible).
- If hypotensive:
  - IV fluid boluses- aliquots 5ml/kg if suspicion of cardiac aetiology
  - Vasoactive drugs -**Adrenaline first line**
  - IV Hydrocortisone in catecholamine resistant shock

Age (yrs)	Systolic (5th centile)
1-2	70
3-4	75
5-6	80
7-10	85
11-14	90
15-16	95

Disability



- Assess 'best' neurology/GCS & pupils post ROSC.
- Central (oesophageal/rectal) and continuous temperature monitoring.
- Monitor for and treat seizures (follow APLS algorithm).
- Consider early CT head to rule out intracranial pathology.
- 30 degrees head up, midline position.
- **Temperature targeted management - do not actively warm unless <33 degrees** (d/w KIDS NTS consultant for defined target).
- Start IV analgesia/sedation - monitor for and treat agitation.
- IV muscle relaxant if shivering (may mask seizures).
- Monitor for, and treat signs of raised ICP

Electrolytes/ Fluids

- Start 80% maintenance IV fluids - target **normoglycaemia (4 – 10 mmol/L)**.
- Target normal electrolytes: **Potassium 3.5 – 5 mmol/L , iCa (on gas) > 1.0 mmol/l**
- Insert urinary catheter - aim **urine output > 1ml/kg/hr.**

Ensure comprehensive history obtained:
- Preceding neurological status and development.
- Family history of acute life threatening events, sudden cardiac arrest, metabolic or congenital disease.
- Details of cardiac arrest – witnessed, bystander CPR, initial cardiac rhythm identified, duration of CPR, doses of adrenaline, defib attempts, time of ROSC.

Other Management:
- Investigate underlying cause – seek specialist advice.
- Consider antibiotics if sepsis/aspiration concern
- Routine anticonvulsants not indicated.
- Consider Child Protection/SUDIC protocol.

See BCH PICU Post Cardiac Arrest Guideline v2.0 for full guideline

Author - AGB/RN- July'24. Review July '27