

DROWNING

Resuscitation: Cardiac Arrest - APLS/EPLS guidelines



C- spine control

Consider but low risk of C-spine injury (~0.5%) unless unwitnessed or has facial injury or involved high energy impact



Airway/Breathing

Early airway protection with cuffed endotracheal tube if:
Unable to protect airway
Hypoxia despite high FiO₂
Lung protective ventilation: Aim for normocapnia



Circulation

Correct relative hypovolaemia
Inotropic/vasopressor support
peripheral dopamine or phenylephrine
Central dopamine +/- noradrenaline.
ECG - Arrhythmia, long QT or ongoing arrhythmia - IV magnesium



Disability – Prevention of secondary brain injury
GCS is not always secondary to drowning - exclude other causes
Neuro protective measures²

Sedation - morphine and midazolam

15 degrees head up,

P_aCO₂ 4.5-5

Nomoglycaemia

Seizures - Load with phenytoin

Avoidance of fever/hyperthermia.

Target sodium 145-150mmol/l (See sort hypertonic saline guideline)

**Actively warm to 32°C then maintain temperature
Then Active prevention of Pyrexia (<37.5°C)**

SORT Referral

- Hypoxia SpO₂ <92%; Hypercarbia
- Significantly increased work of breathing
- Increased RR
- Reduced level of consciousness
- Hypothermia

Investigations

- FBC/U+Es/LFTs/Coag/CK
- Blood Gas inc **Glucose**
- CXR - further trauma imaging as required

Hypothermia

May suggest significant duration of cardiac arrest

Measure **central** temp (Rectal/oesophageal)

< 30°C

- Rewarm
- Max 3 shocks for shockable rhythms avoid Adrenaline/Amiodarone <30°C

30-35°C

- Double dosing interval of resuscitation drugs

Rewarming - (Target 32-34 °C)

If Cardiovascularly Stable warm at 0.5°C/hr

- Warmed fluids
- Forced air blankets
- Warm humidified gases

If Cardiovascularly unstable as above +/-

- Bladder irrigation - warm fluid - 42°C 5mls/kg, instill for 1 minute, drain and repeat.
- Temperature management systems
- Haemofiltration

Poor Prognostic factors^{1,2,5}

Apnoea >40 mins

pH<7.1 despite treatment

P_aO₂< 8 despite treatment

Duration of submersion >10 mins

Time to first BLS

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www.sort.nhs.uk