Regional Trauma Network Newsletter

May 2018

Pediatric Drowning Trauma Resuscitation

No specific treatment in submersion injuries, care is supportive and focuses on reducing secondary injury.

1) **Airway & Breathing:** Apply O2, Support with BVM in respirations inadequate.
2) **Circulation:**

   A) Establish IV/IO access

   B) If no pulse—initiate PALS algorithm for pulse-less arrest. (See joining box)

   C) If pulse—monitor HR/BP, IV fluid if hypotensive or poor perfusion.

   D) Avoid rough movement—Can precipitate arrhythmias in cold patients.
3) **Disability:** Assess GCS, c-spine only if indicated.
4) **Exposure:** remove wet clothes, apply warm blankets.

You got ROSC! Ongoing Support of the Pediatric Drowning Patient

Airway: Intubate if oxygenation failure or GCS<8.

Breathing: Target O2 sat 92-98% with typical lung protective ventilation for ARDS.

Circulation: Target SBP > 70mmHg + (2 x age), obtain core temp.

Disability: Typical neuroprotective strategies. Ex: See box attached

- There is no indication for routine CT head. The anoxic brain has a normal CT initially.

Exposure: No indication for therapeutic hypothermia but target normothermia and avoid temps above 37.5˚C. **Once 32-34˚C, rewarm slowly (0.5 to 1˚C/hour)

Other: No role for antibiotics, steroids or sodium bicarb.

Source: Taken from the Pediatric Talk Trauma Conference: presented by Dr. Brianna McKelvie Pediatric Intensive Care Physician at Children's Hospital LHSC.

Thank you Dr. McKelvie.

PALS Alterations if patient is <31 ˚C

1) If shockable rhythm, no more than 3 shocks.
2) No epinephrine if temp less than 31 ˚C
3) Focus on internal rewarming to resume circulation. Consider transfer for ECMO.

Pediatric Neuroprotection

- Good oxygenation (sats > 92%)
- Good BP (>70mmHg + 2 x age)
- Normal CO_2 (assess with $ETCO_2$ or ABGs)
- Normal core temperature
- Normal glucose
- Normal sodium
- Avoid seizures
- Use sedation to reduce cerebral metabolic demand.

Pediatric Trauma Tips from Dr. Neil Merritt

⇒ **Use nasal atomized drugs!!** Can be used prior to IV insertion to help undress a child who has a fracture or for any painful procedures.

⇒ **Use ketamine in sedation!** The old opinion that Ketamine increased ICP in kids has been disproved.

⇒ **If the child has a seatbelt sign** post MVC—transfer to Trauma Center!

⇒ **Use topical analgesics!** ELA-max is a new product that works in 5 minutes!

⇒ **TXA in pediatric population? YES!**

Age > 12, give 1g TXA over 10 minutes.

Age < 12, give 15mg/kg over 10 minutes.

⇒ **Use a tourniquet** for extremity bleeding.