



Pediatric Suspected Moderate/Severe Traumatic Brain Injury (TBI)

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Prehospital Identification of Moderate/Severe TBI

- Any pt with a mechanism of injury consistent with a potential for a brain injury, and one or more of the following:
 - GCS <13 (in infants: any decreased responsiveness, deterioration of mental status, irritation or agitation)
 - Post-trauma seizures, whether continuing or not
 - Multi-system trauma requiring advanced airway placement

For any patient with a suspected moderate/severe TBI, avoid/treat the three TBI “H-Bombs”:

- 1) Hyperventilation, 2) Hypoxia, 3) Hypotension

BLS

- Assess V/S, including continuous SpO₂ monitoring and pupil exam: Reassess V/S every 3-5 min if possible
- High-flow O₂ (regardless of SpO₂ reading)
- If continued hypoxia (SpO₂ <94%) or inadequate ventilatory effort, proceed through the following in a stepwise manner:
 - Reposition airway
 - Initiate positive pressure ventilation with appropriate airway adjunct if necessary (use of a pressure-controlled BVM &/or ventilation rate timer is recommended if available)
- Avoid hyperventilation
 - Infant (0-24mo) ventilation rate: 25 breaths/min
 - Pediatric (2-14yo) ventilation rate: 20 breaths/min
- Maintain normothermia
- Consider the concurrent need for appropriate immobilization/spinal motion restriction

ALS

- Continuous cardiac & EtCO₂ monitoring
- IV/IO NS TKO: For hypotension, bolus 20 mL/kg, repeat bolus until hypotension resolves
- Check blood glucose

Blood glucose ≤60 mg/dl?

Dextrose 10%

- 5 ml/kg (0.5 gm/kg) IV/IO
- Max: 100 mL (10 gm)

**OR
Glucagon**

- <24 kg: 0.5 mg IM
- ≥24 kg: 1 mg IM

NO

For persistent hypoxia &/or inadequate ventilatory effort:

- Supraglottic airway
- Target EtCO₂: 35-39 mmHg

- Transport to appropriate destination & notify receiving facility of a “Trauma Alert” as soon as possible (if applicable)
- Monitor & reassess