Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

Traumatic Brain Injury

Faculty of Paediatrics
Royal College of Physicians of Ireland

The key aim in Traumatic Brain Injury Management is detection of life threatening intracranial bleeding, and to prevent and minimise secondary brain injury from hypoxia, poor cerebral perfusion, cerebral bleeding, hypoglycaemia, seizures and fever.

If Major Trauma also Follow Major Trauma Guideline

Mild= GCS 14-15 **A**VPU
Moderate= GCS 9-13 A**V**PU
Severe = GCS 3-8 AV**PU**

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SEVERE:

- Stabilise Airway
- Provide O2
- Secure IV Access
- Manage Intracranial Pressure
- Contact PICU
- Earliest Neurosurgery input

DANGEROUS MECHANISM*

- High-speed RTA >64kph
- Fall 2x height of child
- High-speed injury from A projectile or other object

RESOURCES:
www.headway.ie

REFERENCES:
Head injury:NICE guideline CG176 2014

HISTORY

- Timing and mechanism*
- Loss of Consciousness
- Amnesia pre or post event
- Disorientation, AVPU/ GCS
- Seizure
- Nausea/ Vomiting
- Ataxia/ Dizziness
- Visual symptoms
- Clinical course improving/deterioriating?
- Other injuries
- Consider seizure or arrthymia as precedent to injury
- Circumstances- child protection concerns?
- Past hx of bleeding/warfarin tx

EXAMINATION
PRIMARY SURVEY
Eyes: Pupils, Fundoscopy, N.B. NAI
Movements- focal sign, nystagmus.
Panda Eyes
Palpate Head, Neck, Face, Teeth
Check for CSF/blood in nose/ears
Neuro exam, balance + Gait.

INVESTIGATIONS
CT BRAIN
FBC, Glucose, VBG, ECG, +/- Toxicology, +/-CT Neck

ADMIT IF MEETS ANY CT CRITERIA
DISCHARGE ADVICE
Re-present if develops persistent headache, seizure, becomes confused/drowsy/unconscious, ataxic or vomits
See Concussion(mild TBI) guideline for REST, RETURN TO PLAY/SCHOOL ADVICE

DISCHARGE REQUIREMENTS

Observations for 4 hrs post symptoms
Normal conscious state
No further vomiting
Tolerating oral fluids
Headache not persisting
Social circumstances
Any consideration of NAI must be brought to a consultant

A MINOR HEAD INJURY WITHOUT SYMPTOMS OR SIGNS CAN BE DISCHARGED DIRECTLY WITH HEAD INJURY +/-SAFETY IN THE HOME ADVICE

CT BRAIN INDICATIONS

Initial GCS <14, or for children under 1 year GCS <15.
At 2 hours after the injury, GCS less than 15.
On Warfarin Therapy
Suspicion of non-accidental injury.
Post-traumatic seizure but no history of epilepsy.
Suspected open or depressed skull fracture or tense fontanelle.
Sign of basal skull fracture
Focal neurological deficit.
Bruise, swelling or laceration of more than 5 cm on the head in children <1yr old.

OR TWO OF:
Loss of consciousness lasting> 5 mins (or unknown)
Abnormal drowsiness.
3+ discrete episodes of vomiting.
Dangerous mechanism of injury*
Amnesia (antegrade or retrograde) > 5 mins.

This algorithm has been produced by the National Paediatric and Neonatology Clinical Programmes. It is aimed at medical, nursing and allied health professionals working in both primary and emergency care settings.

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This algorithm has been prepared to promote and facilitate standardisation and consistency of practice, using a multidisciplinary approach.

Clinical material offered in this algorithm does not replace or remove clinical judgement.