

PROTOCOL FOR: Closed Head Injury

POLICY: 1. Patients with closed head injury will have initial assessment on arrival and reassessment hourly documented in ED Record. Refer to Appendix A attached for Types of Closed Head Injury.

DESIRED OUTCOMES: Patient's neuro status is assessed and treated appropriately to preserve optimal cerebral perfusion.

CLINICAL
ASSESSMENT

& CARE: 1. Airway:

a. If global loss of consciousness or compromised airway, notify MD for immediate interventions.

2. Breathing:

a. If patient conscious and airway intact, administer O₂ per MD order; titrate to maintain S_aO₂ >95%.

b. If intubated, continue bag valve mask or mechanical ventilation.

c. Obtain ABG's per MD. Validate P_aO₂ at least 90mm Hg.

3. Circulation:

a. Obtain IV access and initiate IV fluid per MD order.

b. Maintain systolic or main arterial pressure per parameters defined by MD.

4. C-spine immobilization will be maintained until C-spine is cleared.

5. Perform secondary survey.

6. Assess and document the following:

a. Vital signs

b. Level of consciousness and Glasgow Coma Scale (GCS) initial hr. or more frequently if indicated and as needed if indicated and upon discharge.

c. Pupillary size and reaction.

d. Color, sensation and movement of extremities.

PROTOCOL FOR: Closed Head Injury

7. Diagnostic studies per MD may include CT scan, C-spine, facial x-rays.
8. Obtain labs per MD order.
9. Follow protocol for Transfer of Patient to Another facility, if appropriate.

PATIENT TEACHING: If patient is discharged, review head injury instructions with patient/family.

DOCUMENTATION: Document assessments/interventions in E.D. Record

APPROVAL: Nursing Standards Committee
Emergency Department Standards Committee

EFFECTIVE DATE: 3/98

REVISION DATE(S): 10/99, 11/02, 2/06, 9/08

PROTOCOL FOR: Closed Head Injury

APPENDIX A: TYPES OF CLOSED HEAD INJURIES

- A. Concussion:
1. No serious or permanent injury to the brain tissue.
 2. Clinically, patient has a temporary loss of consciousness due to disruption to the reticular activating system and is frequently amnesic for the events immediately surrounding injury.
 3. Patients are usually awake, alert, and have no focal neurologic finding.
- B. Contusion:
1. Anatomic injury to the brain.
 2. Frequently present with prolonged unconsciousness.
- C. Acute Epidural Hemorrhage:
1. Hemorrhage in the epidural space.
 2. Typically due to a tear in the middle meningeal vessels associated with a linear skull fracture transversing the middle meningeal artery.
 3. Patients present with a loss of consciousness (concussion), which is usually associated with an interval of relative consciousness. They then develop a secondary depression in consciousness followed by contralateral weakness and ipsilateral pupillary dilation.
- D. Acute Subdural Hematoma:
1. Due to venous bleeding in the subdural space.
 2. Frequently not associated with skull fracture.
 3. Presentation may be insidious with progression of neurologic deficit, or acute with global loss of consciousness or focal neurologic deficit.
- E. Subarachnoid Hemorrhage:
1. Hemorrhage in the subarachnoid space.
 2. Associated clinically with headache, photophobia, and nuchal rigidity.
- F. Intracerebral Hemorrhage:
1. Bleeding into the brain substance, which may occur at any anatomic location.
 2. Neurologic deficit is usually dependent on the region involved and the amount of surrounding edema.
- G. Diffuse Axonal Injury:
1. Results from acceleration/deceleration forces causing both physiologic and anatomic disruption of the axons.
 2. Can be mild, moderate, or severe depending on the amount of anatomic injury.
 3. Patients frequently present with loss of consciousness and a variety of neurologic deficits.
 4. CT is either unremarkable or characteristic multiple small punctuate hemorrhages are present.
 5. Frequent neurological assessment, including repeat CT's are necessary to rule out progressive neurologic injury.

GLASGOW COMA SCALE: INFANT / TODDLER		GLASGOW COMA SCALE: CHILDREN / ADULT	
EYE OPENING	<u>SPONTAENOUS</u> _____ 4	EYE OPENING	<u>SPONTAENOUS</u> _____ 4
	<u>TO VOICE</u> _____ 3		<u>TO VOICE</u> _____ 3
	<u>TO PAIN</u> _____ 2		<u>TO PAIN</u> _____ 2
	<u>NONE</u> _____ 1		<u>NONE</u> _____ 1
BEST VERBAL RESPONSE	<u>SMILES, INTERACTS</u> _____ 5	BEST VERBAL RESPONSE	<u>ORIENTED</u> _____ 5
	<u>CONSOLABLE</u> _____ 4		<u>CONFUSED</u> _____ 4
	<u>CRIES TO PAIN</u> _____ 3		<u>INAPPROPRIATE WORDS</u> _____ 3
	<u>MOANS TO PAIN</u> _____ 2		<u>INCOMPREHENSIBLE WORDS</u> _____ 2
	<u>NONE</u> _____ 1		<u>NONE</u> _____ 1
BEST MOTOR RESPONSE	<u>NORMAL SPONT. MOVEMENT</u> _____ 6	BEST MOTOR RESPONSE	<u>OBEYS COMMAND</u> _____ 6
	<u>LOCALIZES PAIN</u> _____ 5		<u>LOCALIZES PAIN</u> _____ 5
	<u>WITHDRAWS TO PAIN</u> _____ 4		<u>WITHDRAWS (PAIN)</u> _____ 4
	<u>ABNORMAL FLEXION</u> _____ 3		<u>FLEXION (PAIN)</u> _____ 3
	<u>ABNORMAL EXTENSION</u> _____ 2		<u>EXTENSION (PAIN)</u> _____ 2
	<u>NONE</u> _____ 1		<u>NONE</u> _____ 1