TITLE: HEAD TRAUMA

PURPOSE:

To provide guidelines for rapid, accurate assessment of the head and intracranial structures for traumatic injury and to plan and implement appropriate interventions for identified injuries.

PROCESS:

I. TRANSFER TO HIGHER LEVEL OF CARE

Any patient with an intracranial bleed or skull fracture should be transferred to higher level of care as soon as stabilized. See Transfer Guidelines T1.

II. TRAUMATIC BRAIN INJURY AND SEIZURE PROPHYLAXIS

Prior to transfer, any patient with a traumatic brain injury at a high risk for seizures (large cerebral contusions, intracerebral hemorrhage, previous craniotomy, subdural hematoma) should be loaded with seizure prophylaxis:

A. Loading Dose
   1. Not Seizing
      a. Fosphenytoin 15 PE mg/kg (rounding to the nearest 100 PE mg). Infuse no faster than 150 mg/min
      b. Phenytoin 15 mg/kg (rounding to the nearest 100 mg). Infuse no faster than 50 mg/min

   2. Actively Seizing
      a. Fosphenytoin 20 PE mg/kg (rounding to the nearest 100 PE mg). Infuse no faster than 150 mg/min 20 mg/Kg (rounding to the nearest 100 mg)
III. MANAGEMENT OF BLUNT HEAD TRAUMA ON ANTICOAGULANT OR PRESCRIPTION ANTIPLATELET THERAPY WITHOUT INTRACRANIAL BLEED ON INITIAL HEAD CT

A. Definitions

1. ACAP agents.
2. Neurologic deterioration is defined as a decrease in GCS or level of consciousness, onset or exacerbation of focal neurological deficit, or development of symptoms attributable to head injury such as headache, nausea or vomiting, dizziness or visual disturbance.

B. Management

1. Patients on ACAP agents with blunt head trauma will have a baseline non-contrast head CT after documenting neurological exam on arrival. Obtain a TEG on all patients and a PT/PTT/INR level only on patients taking warfarin or heparin.

2. Patients may be discharged home after an observation period of 6 hours (from time of injury) if ALL of the following criteria are met:
   a. No findings of intracranial bleeding on head CT
   b. No signs of neurologic deterioration during 6 hour observation period
   c. INR < 3.5 in warfarin-therapy patients
   d. Patient has no other injuries that warrant admission
   e. The patient is not taking Direct Xa Inhibitors [please see below]

3. Patients will be transferred to higher level of care if ANY of the following criteria are met:
   a. Findings of intracranial bleeding on head CT
Guidelines and Protocols

4. Patients will be admitted to the hospital and a repeat head CT obtained in 6 hours if ANY of the following criteria are met:
   a. INR $\geq 3.5$ in warfarin-therapy patients
   b. Inability to obtain neurologic exam despite normal baseline head CT

5. Patients with a normal head CT and neurologic exam will be observed by trauma surgery for 23 hours if they are taking anticoagulants excluding aspirin/antiplatelet drugs.

The natural history and progression of traumatic brain injury with these agents is unknown and not reported in the literature. The patient will be observed in the hospital for 23 hours with serial neurologic exams performed and documented by the nursing staff every four hours. Any patient with neurologic deterioration will be immediately reported to the trauma team and evaluated with a stat head CT. Patients with no neurologic deterioration during the observation period will be evaluated by the trauma team prior to discharge home.

REFERENCE / BIBLIOGRAPHY:


4. Risk of Mortality After Head Trauma. *Journal of Trauma and Acute Care Surgery*, 61(1), 107. doi:10.1097/01.ta.0000224220.89528.fc


**OFFICE OF PRIMARY RESPONSIBILITY:**

LYNDON B. JOHNSON HOSPITAL TRAUMA SERVICES

**REVIEW / REVISION HISTORY**

<table>
<thead>
<tr>
<th>Effective Date</th>
<th>Version #</th>
<th>Review/ Revision Date (Indicate Reviewed or Revised)</th>
<th>Approved by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/21/17</td>
<td>7</td>
<td>3/21/17</td>
<td>Trauma Committee</td>
</tr>
<tr>
<td>10/21/14</td>
<td>6</td>
<td>10/21/14</td>
<td>Trauma Committee</td>
</tr>
<tr>
<td>10/16/12</td>
<td>5</td>
<td>10/16/12</td>
<td>Trauma Committee</td>
</tr>
<tr>
<td>06/19/12</td>
<td>4</td>
<td>06/19/12</td>
<td>Trauma Committee</td>
</tr>
<tr>
<td>09/23/11</td>
<td>3</td>
<td>09/23/11</td>
<td>Trauma Committee</td>
</tr>
<tr>
<td>09/15/08</td>
<td>2</td>
<td>09/15/08</td>
<td>Trauma Services</td>
</tr>
</tbody>
</table>