Background

The Red Duke Trauma Institute frequently evaluates patients receiving anticoagulant or prescription antiplatelet (ACAP) therapy at the time of injury. Because there are reports of delayed intracranial hemorrhage (ICH) after blunt trauma in such patients, we have developed a clinical practice policy for the evaluation and treatment of patients receiving ACAP therapy in the setting of blunt trauma with both normal and abnormal screening CT scans.

Definitions

ACAP agents include warfarin (Coumadin), clopidogrel (Plavix), prasugrel (Effient), heparin, enoxaparin (Lovenox), fondaparinux (Arixtra), rivaroxaban (Xarelto), apixaban (Eliquis), dabigatran (Pradaxa), or dipyridamole and aspirin in combination.

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.

Management

Patients on the above 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. Please refer to the “Anti-Coagulation Guideline” (https://med.uth.edu/surgery/files/2017/06/Anti-CoagulantReversal-2013.pdf) for medications to reverse the above ACAP agents.

Patients may be discharged home after an observation period of 6 hours (from time of injury) if ALL of the following criteria are met:

- no findings of intracranial bleeding on head CT
- no signs of neurologic deterioration during 6 hour observation period
- INR < 3.5 in warfarin-therapy patients
- patient has no other injuries that warrant admission
- the patient is not taking fondaparinux (Arixtra), rivaroxaban (Xarelto), apixaban (Eliquis), or dabigatran (Pradaxa) [please see below]

Patients will be admitted to the hospital and a repeat head CT obtained in 6 hours if ANY of the following criteria are met:

- findings of intracranial bleeding on head CT (consult Neurosurgery)
- neurologic deterioration (consult Neurosurgery)
- INR ≥ 3.5 in warfarin-therapy patients
- inability to obtain neurologic exam despite normal baseline head CT
Patients with a normal head CT and neurologic exam will be observed in the COU on the trauma service for 23 hours if they are taking ANY of the following medications:

- fondaparinux (Arixtra)
- rivaroxaban (Xarelto)
- apixaban (Eliquis)
- dabigatran (Pradaxa)

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 Clinical Observation Unit (COU) 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.
References