SUBJECT: Rapid Evaluation and Reversal of Anticoagulants

REVIEWED: Revised 11/30/18

RECOMMENDATION(S): Dr. William Beck **APPROVAL: 08/09/2015**

CONCURRENCE(S): All

EFFECTIVE: 08/09/2015

PURPOSE:
To provide guidelines for rapid identification of the patient taking anticoagulants and institute appropriate agents to achieve appropriate reversal of the agent(s) involved.

BACKGROUND:
Currently, it is estimated that over six million patients in the US are treated with warfarin, with an increasing number being treated with an antiplatelet drug (APD), most commonly clopidogrel, or one of the newer anticoagulants, dabigatran, rivaroxaban or apixaban. This, coupled with the fact that the population over the age of 65 years is expected to double to 20% of the total U.S. population by the year 2030, suggests that the issue of head trauma in the chronically anticoagulated patient will continue to become more prevalent. Moreover, it has been demonstrated that patients older than 65 years are at increased risk for ICH with resulting increased morbidity and mortality.

Because of cerebral atrophy, significant ICH can occur without early ICP elevation and the associated mental status changes typically seen in the younger population. These injuries can go undetected if the usual criteria for determining the need for head CT are used in the elderly, particularly those on anticoagulation. Many groups advocate liberal criteria for determining the need for head CT scanning in the elderly, including those that present with a GCS of 14 to 15, and no LOC, amnesia, vomiting or diffuse headache.

Based on these issues it becomes imperative to identify patients on anticoagulants as quickly after presentation as possible so that diagnostic imaging and prompt reversal of the anticoagulant may be implemented, if indicated.

There is an existing UAMS Department of Pharmacy guideline for the reversal of anticoagulants. This shall serve as the reversal guideline for the treatment of trauma patients.

PROTOCOL:

A. Rapid Identification:
   1. All patients presenting to the Emergency Department shall be queried about their use of anticoagulants and antiplatelet drugs in their initial triage, immediately after the primary survey in trauma patients, or as soon as reasonably possible.
      a. In instances where the patient cannot provide this information efforts should be made to determine this information from other sources (family, pharmacy,

primary physician, electronic medical record)

b. In instances where there is no ability to determine the patients risk for anticoagulation clinical suspicion should guide the expediency of the workup.
c. If the patient's medication status cannot be determined STAT PT/INR plus ROTEM/PFA/P2Y12 should be sent as described below.

2. High clinical suspicion should be present in any patient found to be on an anticoagulant or antiplatelet therapy (warfarin, clopidogrel, dabigatran, rivaroxaban or apixaban) who presents with a blunt trauma mechanism including a single level fall (i.e. fall from standing) and has at least one of the following:
   a. History of loss of consciousness
   b. History of mental status changes (i.e. GCS < 15)
   c. Any sign of external injury to the head or neck
   d. Any history of trauma to the head or neck

B. Triage

1. Patients screening positive for use of anticoagulants with high risk factors as described in Section A above should receive the following:

   a. Patients meeting trauma activation criteria should be moved to the trauma bay and the trauma team should be activated at an appropriate level.

   b. Non trauma patients should be triaged directly to a treatment area with immediate notification of ED physician.

   c. All patients should have a STAT blood draw for PT/INR and Type & Screen with initiation of adequate peripheral IV access

   d. Initiation of emergent head CT. Patients failing to meet trauma criteria should receive equal prioritization with trauma and stroke activation patients.

   e. Immediate interpretation of head CT by Radiology with direct call back to the ED physician. The interval between ordering the head CT and interpretation resulting to the ED physician should be no more than 30 minutes.

   f. Initiation of treatment / reversal as indicated for abnormal lab or CT findings (See

below).

C. Treatment patients on anticoagulation with CT findings (ICH)

1. For specific reversal guidelines refer to the UAMS Pharmacy Guideline for Reversal of Anticoagulants

D. Treatment of patients on anticoagulation with normal head CT

1. Admission for 24-hour observation with serial neurological exams should be considered on a case by case basis in patients taking warfarin (particularly those patients with INR's > 3), dabigatran, rivaroxaban or apixaban.

2. Unless indicated for other injuries, correction of therapeutic INR's in the face of a normal head CT is probably not necessary. Consideration should be given to correction of supratherapeutic INR's.

3. In patients taking ASA or clopidogrel, a shorter period of observation or discharge with a reliable caretaker would be considered reasonable.

4. Repeat head CT is not indicated without changes in neurological exam.

Performance Monitoring:

1. Documentation of anticoagulant and antiplatelet therapy query and findings

2. PT/INR or ROTEM result present on all patients with evidence of ICH on CT or significant head trauma

3. Time interval from arrival to CT Scan completion less than 30 minutes in patients on anticoagulation or antiplatelet therapy