

Introduction :

Mortality in spontaneous intracranial hemorrhage (ICH) can be as high as 55% in the first month alone and survivors may suffer severe long-term disability and prolonged immobilization.

ICH patients are at an increased risk of venous thromboembolism (VTE). Preventative methods used today are pharmacological agents, i.e. heparin and low molecular weight heparin (LMWH) and mechanical compression devices.

The Neurocritical Care Society has published guidelines regarding early use of anticoagulants for prophylaxis; however physicians may be hesitant to initiate pharmacologic prophylaxis because of concerns over hematoma expansion. This study evaluates physicians practice adherence to the Neurocritical Care Society guidelines for the prevention of venous thromboembolic diseases.

Methods:

A retrospective chart review of 100 patients admitted to the medical ICU with the diagnosis of ICH between July 1st, 2017 to July 1st, 2018 was completed. Variables regarding demographics, comorbidities, intracranial bleeding size, and times to initiate mechanical and/or pharmacological DVT prophylaxis as well as reasons for not starting pharmacologic prophylaxis were collected. Descriptive statistics were used to characterize the sample.

Results:

Of the 100 patients admitted to ICU with ICH, pharmacologic prophylaxis was initiated in 26%. The median time to start pharmacologic prophylaxis was 6 days.

For those not receiving pharmacologic prophylaxis a documented contraindication was seen in 3% (including hematoma expansion or extracranial bleeding).

96% of the patients received mechanical compression devices. 4% of the patients did not receive prophylaxis at all. 12% of the patients expired or were sent to hospice by day 5.

There were no differences in the proportion of patients receiving pharmacological prophylaxis between patients with different sizes of intracranial bleeds.

Recommendations for VTE Prophylaxis after Intracranial Hemorrhage (from Neurocritical Care Society, 2016)

1. We recommend the use of IPC and/or GCS for VTE prophylaxis over no prophylaxis beginning at the time of hospital admission. (Strong recommendation and high-quality evidence)
2. We suggest using prophylactic doses of subcutaneous UFH or LMWH to prevent VTE in patients with stable hematomas and no ongoing coagulopathy beginning within 48 h of hospital admission. (Weak recommendation and low-quality evidence)
3. We suggest continuing mechanical VTE prophylaxis with IPCs in patients started on pharmacologic prophylaxis. (Weak recommendation low-quality evidence).

Conclusion:

Of patients admitted to the ICU with ICH, approximately one quarter received pharmacologic prophylaxis. Only 46% of these patients received it in the time frame recommended by the Neurocritical Care Society guidelines. Initiation of pharmacologic prophylaxis was not associated with bleed size.

Pharmacologic prophylaxis for venous thromboembolic disease in the setting of an intracranial bleed is underutilized in the intensive care unit. When it is utilized, it is frequently initiated later in the hospital course than recommended by current guidelines.

Further physician education or perhaps computer-generated reminders in the electronic medical records may be helpful in improving compliance.

References:

1. Nyquist P, Bautista C, Jichici D et al. Prophylaxis of Venous Thrombosis in Neurocritical Care Patients: An Evidence-Based Guideline: A Statement for Healthcare Professionals from the Neurocritical Care Society. *Neurocrit Care*. 2015;24(1):47-60. doi:10.1007/s12028-015-0221-y