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Early DVT Chemoprophylaxis in Traumatic Brain Injury

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Introduction

Venous thromboembolism (VTE) is a common complication of traumatic brain injury (TBI) with an estimated incidence of 25% when chemoprophylaxis is delayed. The timing of initiating prophylaxis is controversial given the concern for hemorrhage expansion. The objective of this study was to determine the safety of initiating VTE chemoprophylaxis in patients with TBI within 24h of presentation.

Methods

We performed a retrospective analysis of a prospectively maintained database for all patients with traumatic intracranial hemorrhage presenting to a level I trauma center between July 2011 and September 2013. Patients receiving early chemoprophylaxis (<24h) were compared to the matched cohort of patients who received heparin in a delayed fashion (>48h). The primary outcome of the study was radiographic expansion of the intracranial hemorrhage. Secondary outcomes included VTE, use of intracranial pressure monitoring, delayed decompressive surgery for refractory elevated ICP, and all-cause mortality.

Results

Of the 282 patients in our study, 94 (33%) received chemoprophylaxis within 24h of admission. The cohorts were evenly matched across all variables. The primary outcome occurred in 18% of patients in the early cohort compared to 17% in the delayed cohort (p = 0.83). Fifteen patients (16%) in the early cohort underwent an invasive procedure in a delayed fashion. This compares to 35 patients (19%) in the delayed cohort (p = 0.38). Five patients (1.7%) in our study had a venous thromboembolic event (i.e. DVT or PE) during their hospitalization. Two of these patients received early chemoprophylaxis (p = 0.75). The rate of mortality from all-causes was similar in both groups (4.1% vs. 3.7%, p = 0.83).

Conclusions

Early (<24h) initiation of VTE chemoprophylaxis in patients with traumatic intracranial hemorrhage appears to be safe. Further prospective studies are needed to validate this finding.

Learning Objectives

By the conclusion of this session, participants should be able to: 1) identify the incidence of VTE in patients with TBI, 2)discuss the importance of early chemoprophylaxis