

Early Resumption of Anticoagulation in Mechanical Valve Patients With Intracerebral Hemorrhage

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Introduction

Guideline recommendations for resumption of anticoagulation following intracranial hemorrhage are at least four weeks after stable bleed. However, most recommendations are specific to nonvalvular etiologies and do not address mechanical valves. Mechanical valves are at high risk of valve thrombosis, which carries high mortality and morbidity. There are a handful of small retrospective studies reporting a wide range of management strategies for this problem. We sought to review our experience of early resumption of anticoagulation in mechanical valve patients.

Methods

Retrospective review of patients admitted to the Neurocritical Care Unit with mechanical valve and hemorrhagic event from January 2013 through present. Most patients were started on low dose heparin drip three days after stable head CT. The incidence of hematoma expansion or new hemorrhage was recorded.

Results

28 patients were identified: 17 patients with aortic valves, 9 with mitral, and 2 with both valve types. Subdural hematoma (SDH) was the most common admission diagnosis, followed by intracerebral hemorrhage (ICH). All but three patients had anticoagulation reversed upon admission. Anticoagulation was restarted an average of 2.7 days following stable head CT. Two patients had expanding hemorrhage, both of which had hypertensive episodes in the hours leading up to neurological decline. One patient had an EVD tract hemorrhage. Average time from anticoagulation to complication was 2.7 days. No thrombotic complications were noted.

Patient Characteristics	
<i>Anticoagulation Prior to admission</i>	
Warfarin	26 (92.8%)
Lovenox	1 (3.5%)
Novel Oral Anticoagulant	1 (3.5%)
Anticoagulation on Admission	23 (82.1%)
<i>Valve Type</i>	
Aortic	17 (60.7%)
Mitral Valve	9 (32.1%)
Both Aortic and Mitral Valve	2 (7.1%)
<i>Diagnosis</i>	
Intracranial Hemorrhage	10 (35.7%)
Subdural Hematoma	8 (28.5%)
Traumatic Brain Injury	5 (17.8%)
Subarachnoid Hemorrhage	4 (14.2%)
Cervical Epidural Hematoma	1 (3.5%)
Average Admission INR	3.91

Hospital Management	
<i>Reversal Upon Admission</i>	
Fresh Frozen Plasma and Vitamin K	7 (25%)
Concentrated Factor and Vitamin K	18 (64.2%)
None	3 (10.7%)
Average time from Stable HCT to anticoagulation	2.72 Days
Average Time from Anticoagulation to Hemorrhage	2.76 Days
Average Time from Presentation to Complication	4.95 Days

Conclusions

Resumption of heparin three days after stable head CT is generally safe and effective in intracranial hemorrhage patients at high embolic risk due to mechanical heart valves. Our patient population had relatively low hemorrhagic complications and no thrombotic complications.

References

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