Desmopressin for antiplatelet reversal in subdural hematoma

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**Background:**

There is a lack of reliable reversal agents available for antiplatelet medications. Desmopressin (DDAVP) is a synthetic vasopressin analog that increases von Willebrand factor, factor VIII, and t-PA to cause a decrease in bleeding time$.$ The 2015 Neurocritical Care Society Guidelines consider a single dose of 0.4 mcg/kg IV DDAVP when an intracranial hemorrhage is associated with antiplatelet agents, but quality evidence to support this recommendation is lacking.

**Objective:**

To evaluate the impact of DDAVP on hematoma expansion and antiplatelet reversal in patients with acute subdural hematomas.

**Methods:**

This was an IRB approved, multicenter, retrospective cohort study that evaluated patients on antiplatelet therapy admitted with subdural hematomas between January 2018 and June 2021. Patients were identified through an electronic medical record report and screened for inclusion. The primary endpoint investigated the difference in hematoma expansion on stability computed tomography scans per radiologist’s read when reversed with DDAVP vs no reversal. Secondary endpoints included hematoma expansion with DDAVP 0.3 mcg/kg vs 0.4 mcg/kg, discharge disposition, length of ICU stay, length of hospital stay, thromboembolic adverse events, hyponatremia at 24 hours, and all-cause mortality at 30 days.

**Results:**

A review of patients on antiplatelet therapy with subdural hematomas treated with DDAVP (n = 51) versus not (n = 51) revealed no significant difference in hematoma expansion on stability CT scans (5.9% vs 17.6%, OR 0.29 [0.07-1.15], p = 0.078). Hematoma expansion did not significantly vary if the patient received 0.3 mcg/kg or 0.4 mcg/kg DDAVP (6.8% vs 0%, OR 1.27 [0.06-1.27.08], p = 0.88). No differences were detected in discharge disposition, length of hospital stay, length of ICU stay, thromboembolic adverse events, hyponatremia at 24 hours, or all-cause mortality at 30 days.

**Conclusion:**

For patients on antiplatelet therapies reversed with DDAVP, there was no significant difference in subdural hematoma expansion. Further studies are warranted to determine the effects of DDAVP on antiplatelet reversal and hematoma expansion in intracranial hemorrhages.