

# Antiplatelet reversal

Antiplatelet therapy is common and complicates the operative management of acute intracranial hemorrhage. Little data exist to guide antiplatelet reversal strategies.

The use of antithrombotic agents, including anticoagulants, antiplatelet agents, and thrombolytics has increased and is expected to continue to rise. Although antithrombotic-associated intracranial hemorrhage can be devastating, rapid reversal of coagulopathy may help limit hematoma expansion and improve outcomes.

Data assessing the relationship between outcome and prehospital antiplatelet agents in the setting of ICH is conflicting in both the trauma and the stroke literature. Only one retrospective review specifically addressed outcomes after attempted reversal with platelet transfusion. Further study is needed to determine whether platelet transfusion ameliorates hematoma enlargement and/or improves outcome in the setting of acute ICH <sup>1)</sup>.

Raimondi et al., recommend discontinuation of the antiplatelet, as well as administration of platelet transfusions and desmopressin only in the setting of life-threatening bleeding <sup>2)</sup>.

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An online survey detailing antiplatelet reversal strategies in patients presenting with acute operative intracranial hemorrhage (subdural hematoma (SDH), epidural hematoma (EDH), and intracerebral hemorrhage (ICH) was distributed to board certified neurosurgeons in the North America.

Of the 2,782 functional email addresses, there were 493 (17.7%) responses to question #1 and 429 (15.4%) completed surveys. Most respondents chose to perform no additional laboratory testing prior to surgical intervention, regardless of hemorrhage type. The most common antiplatelet reversal strategy in the presence of aspirin was platelet transfusion (SDH and ICH) or no intervention (EDH). The most common antiplatelet reversal strategy in the presence of an Adenosine diphosphate receptor inhibitor or DAPT was platelet transfusion or platelet transfusion with DDAVP administration. There was a statistically significant difference in management strategy depending on the antiplatelet therapy ( $p < 0.001$ ).

When patients on antiplatelet medication present with operative intracranial hemorrhage, the majority of neurosurgeons do not perform qualitative platelet function testing. Antiplatelet reversal strategies are significantly influenced by the antiplatelet therapy with more aggressive reversal strategies employed in the presence of ADP antagonists <sup>3)</sup>.

## References

<sup>1)</sup>

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<sup>2)</sup>

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3)

Foreman PM, Ilyas A, Mooney J, Schmalz PGR, Walters BC, Griessenauer CJ. Antiplatelet Medication Reversal Strategies in Operative Intracranial Hemorrhage: A Survey of Practicing Neurosurgeons. World Neurosurg. 2018 May 18. pii: S1878-8750(18)31017-9. doi: 10.1016/j.wneu.2018.05.064. [Epub ahead of print] PubMed PMID: 29783009.

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