

Background



Recommendation	Quality of Evidence
Recommend discontinuing antiplatelet agents when intracranial hemorrhage is suspected.	Good practice statement
Suggest platelet transfusion for patients with aspirin- or ADP inhibitor-associated intracranial hemorrhage who will undergo a neurosurgical procedure.	Conditional recommendation Low-quality evidence
When platelet function testing is not readily available, empiric platelet transfusion may be reasonable.	Conditional recommendation Low-quality evidence
Recommend against platelet transfusion for patients with laboratory documented platelet function within normal limits or documented antiplatelet resistance.	Strong recommendation Moderate quality evidence

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Antiplatelet Medication Reversal Strategies in Operative Intracranial Hemorrhage: A Survey of Practicing Neurosurgeons

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•429 completed surveys from 2782 emails (15.4%)

Table 1. Pooled Responses for Various Laboratory Tests Obtained in Patients with Intracranial Hemorrhage Undergoing Surgical Intervention

	TEG	Platelet Function	Other Functional Assay	Total
SDH	66 (13.4%)	178 (35.7%)	28 (5.7%)	462 (100.0%)
EDH	58 (12.6%)	146 (31.6%)	23 (5.0%)	462 (100.0%)
ICH	85 (14.2%)	186 (36.2%)	29 (5.3%)	459 (100.0%)


χ^2 P value = 0.433.
SDH, subdural hematoma; EDH, epidural hematoma; ICH, intracerebral hemorrhage.

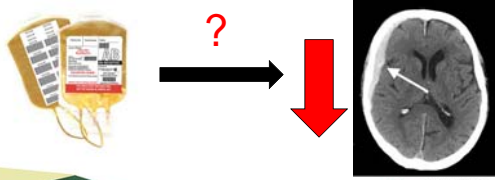
Table 2. Pooled Responses for Various Treatment Options in Patients with Intracranial Hemorrhage Who Are on Aspirin, Adenosine Diphosphate Antagonist, or Dual Antiplatelet Therapy

	DDAVP	Platelets and DDAVP	Neither	Depends on Laboratory Results	Total
SDH					
Aspirin	19 (4.1%)	54 (11.7%)	134 (29.0%)	100 (21.6%)	462 (100.0%)
ADP antagonist	9 (2.0%)	133 (29.1%)	30 (6.6%)	84 (18.4%)	457 (100.0%)
DAPT	8 (1.6%)	170 (37.2%)	23 (5.0%)	83 (18.2%)	457 (100.0%)

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Goals



1. Assess risk of reoperation inferred by antiplatelet medication
2. 

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Hypotheses

1. 

2. 

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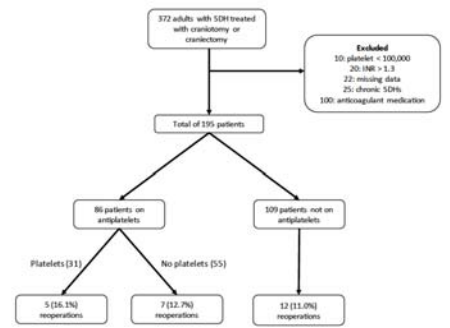
Methods

Geisinger LAB

- Retrospective review
- Craniotomy/craniectomy for evacuation of acute/mixed density SDH
- 2012-2017
- Excluded: Anticoagulant therapy, thrombocytopenia, INR > 1.3
- Endpoint – 30d reoperation rate

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Patient Flowchart




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    graph TD
      A[372 adults with SDH treated with craniotomy or craniectomy] --> B[Total of 195 patients]
      A --> C[Excluded: 10 platelets < 100,000; 20 INR > 1.3; 22 missing data; 25 chronic SDH; 100 anticoagulant medication]
      B --> D[86 patients on antiplatelets]
      B --> E[109 patients not on antiplatelets]
      D --> F[Platelets (31)]
      D --> G[No platelets (55)]
      F --> H[5 (16.1%) reoperations]
      G --> I[7 (12.7%) reoperations]
      E --> J[12 (11.0%) reoperations]
  
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Discussion

- Platelet transfusion may not be necessary for patients on antiplatelet medications undergoing SDH evacuation
- Potential confounders in reoperation rate
 - Significant differences between antiplatelet and no antiplatelet groups
- Limitations
 - Small study size
 - Retrospective review

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Conclusions

1. Antiplatelet medication not a significant predictor of reoperation following evacuation of acute/mixed density SDH.
1. In patients on antiplatelet medications, pre-op transfusion does not reduce reoperation rates

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Future Directions

- Anticoagulation vs no anticoagulation
 - Re-op rates
 - Medication reversal effects on re-op rate (Vit K/PCC)

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