



**Introduction**

Anti-platelet therapy (APT) after traumatic intracranial hemorrhage is a challenging and highly controversial situation, as the risk of hemorrhage progression must be weighed against the risk of thrombotic events. Currently, no data exist to guide clinicians.

**Methods**

We retrospectively identified all patients admitted to our institution with traumatic intracranial hemorrhage that received aspirin or clopidogrel during their initial hospitalization over a three-year period. We reviewed their demographics, hospital course, APT indication, timing of APT initiation relative to the trauma, and complications.

**Results**

A total of 223 patients were identified. The median age and GCS of these patients was 61 and 13, respectively. Forty-eight (21.52%) patients required invasive neurosurgical procedures including intracranial pressure (ICP) monitors and/or open surgeries. Ninety-two patients (41.3%) received these medications because of previous APT use with a high thrombotic risk, and eighty-six patients (38.6%) had blunt cerebrovascular injuries.

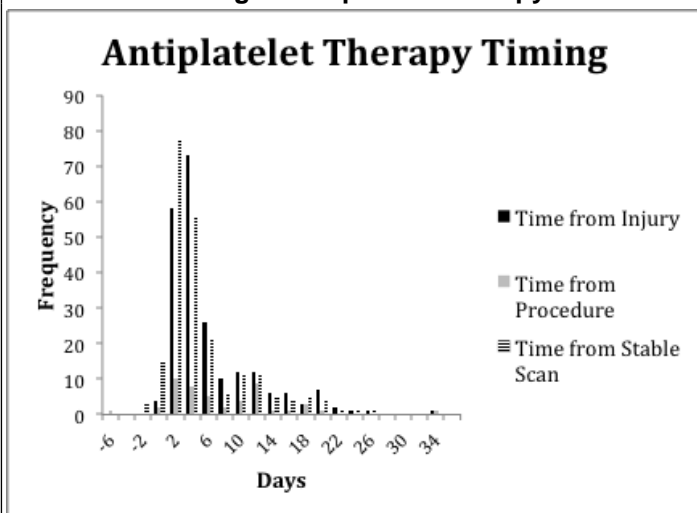
The median time from injury to starting APT was 4 days. Immediate complications including new hemorrhage or previous hemorrhage progression occurred in 6 (2.7%) patients, and 3 (1.4%) of these patients required a neurosurgical intervention. Delayed complications including progression of acute to chronic subdural hematoma (SDH) that required an operative intervention occurred in 5 (3.9%) patients.

Thrombotic events occurred in 21 (9.4%) patients prior to starting APT. Thirteen (5.8%) of these events were potentially preventable because an APT indication existed, but the medications were withheld due to a perceived intracranial hemorrhage risk.

**Demographics and Patient Presentation**

	All Patients	Blunt Cerebrovascular Injury	Prior Prophylactic Antiplatelet Therapy
<b>Demographics</b>			
Population	222	86	91
Males	142 (64%)	54 (63%)	56 (62%)
Age (Median)	61	36.5	77
<b>Presenting Condition</b>			
GCS severe (3-8)	75 (34%)	53 (62%)	7 (8%)
GCS mild/moderate (9-15)	147 (66%)	33 (38%)	84 (92%)
ISS* (Median)	21	29	16
Prior APT/ACT	98 (44%)	28 (33%)	91 (100%)
Required Neurosurgical Procedure	46 (21%)	29 (34%)	9 (10%)
<b>Antiplatelet Therapy Data</b>			
Aspirin 81mg	81 (36%)	22 (26%)	40 (43%)
Aspirin 325mg	111 (50%)	64 (74%)	21 (23%)
Clopidogrel 75mg	13 (6%)	0 (0%)	13 (14%)
Aspirin & Clopidogrel	17 (8%)	0 (0%)	17 (19%)
Days from Injury to Initiation (Median)	4	3	3
Days from Procedure to Initiation (Median)	5	3	9
Days From Stable Scan to Initiation (Median)	3	3	3
Days of APT (Median)	6	8.5	5

**Timing of Antiplatelet Therapy**



**Complications and Outcomes**

	All patients	Blunt Cerebrovascular Injury	Prior Prophylactic Medication
<b>Thrombotic Events</b>			
Cerebrovascular Accidents	14	6	5
Myocardial Infarctions	7	0	5
<b>Total Events</b>	<b>21 (9%)</b>	<b>6 (7%)</b>	<b>10 (11%)</b>
<b>Preventable Events</b>	<b>13</b>	<b>5</b>	<b>8</b>
Days from Injury to Event (Median)	3	3	2
<b>Antiplatelet Therapy Complications</b>			
Acute Radiographic Complications	1 (0.5%)	0 (0%)	1 (1%)
Acute Clinical Complications	0 (0%)	0 (0%)	0 (0%)
Intermediate Clinical Complications*	2 (1%)	1 (1%)	1 (1%)
Long-Term Clinical Complications**	4 (2%)	0 (0%)	3 (3%)
<b>Outcomes</b>			
GOS at Discharge (Median)	4	3	4
<b>Mortality</b>	<b>10 (5%)</b>	<b>3 (3%)</b>	<b>4 (4%)</b>

**Conclusions**

For this patient population, the immediate and delayed intracranial hemorrhage risk from APT therapy must be weighed against the consequences of withholding these medications. Although further studies are in progress, our retrospective review provides the first complication rates for APT in traumatic intracranial hemorrhage patients.

**Learning Objectives**

By the conclusion of this session, participants should be able to: 1) Identify the rate of acute hemorrhagic complications associated with starting anti-platelet agents within a certain time period after traumatic intracranial hemorrhage 2) Identify the rate of thrombotic complications in our patient series 3) Identify the rate of delayed hemorrhagic complications after initiating anti-platelet therapy after traumatic intracranial hemorrhage