Less is more: Streamlining management of isolated traumatic subarachnoid hemorrhage in the modified Brain Injury Guidelines

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BACKGROUND

There are roughly 1.7 million cases of traumatic brain injury (TBI) annually in the United States, including isolated traumatic subarachnoid hemorrhage (iTSAH).

Prior literature demonstrates that patients with iTSAH have low rates of neurologic progression and operative intervention.

While prior literature demonstrates that patients with iTSAH have low rates of neurologic progression and operative intervention, the modified Brain Injury Guidelines (mBIG) recommend neurosurgery consultation, repeat head imaging, and admission to the intensive care unit (ICU).

PURPOSE

To determine rates of clinical progression and/or readmission in patients with iTSAH.

HYPOTHESES

Patients with iTSAH have low rates of clinical progression and/or readmission that necessitate neurosurgical intervention.

CONCLUSIONS

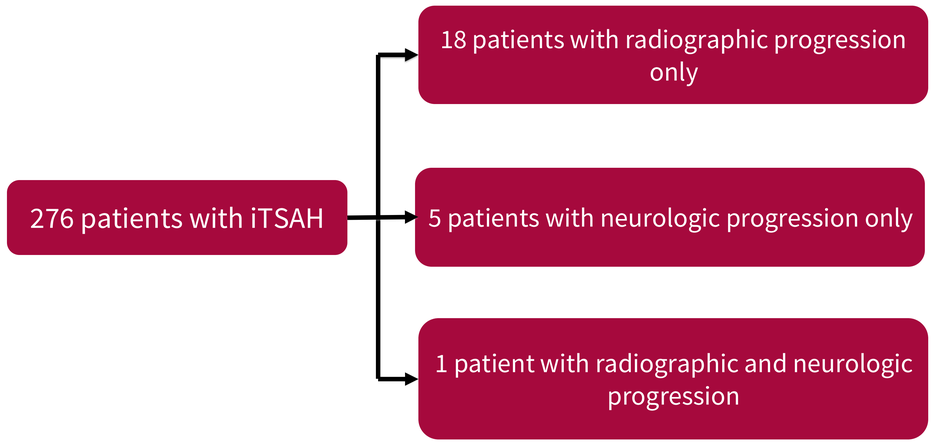
No patients with iTSAH required readmission or operative neurosurgical intervention over the study period.

Patients with iTSAH demonstrated low rates of radiographic and clinical progression.

STUDY DESIGN

- Retrospective analysis performed on trauma patients who presented to two Level I trauma centers with iTSAH between January 2014 and April 2022.
- Patients were stratified into those who did not experience complications (COMP) and those who did. COMP was defined as evidence of radiographic or neurologic progression and readmission within 30 days of index injury.
- Exclusion criteria included age ≤ 15 years, Glasgow coma scale (GCS) < 13, and preinjury antiplatelet or anticoagulant use.

RESULTS



	No Complications n = 270	Complications n = 6	p
ICU LOS	0 (0,1)	5 (0,10)	0.015
LOS	2 (1,4)	10 (5,24)	0.002
Admission GCS	15 (15,15)	15 (14,15)	0.061
Discharge GCS	15 (15,15)	15 (15,15)	0.637
Neurosurgery Consult	216 (80.3)	5 (83.3)	0.999
Operative Neurosurgical Intervention	-	-	-
Total Head CT	2 (1,2)	3 (2,4)	0.028
Radiographic Progression	17 (7.9)	2 (33.3)	0.143
Neurologic Progression	-	6	-
Readmission	-	-	-
Time to clinical change	0	2 (1,2)	<0.001
Mortality	3 (1.1)	0	0.999

- 80.4% of patients with iTSAH received a neurosurgery consultation, and the average number of total head CT performed was 2.
- No patients were readmitted to the hospital within 30 days of the index TBI.
- There were no statistically significant differences in the demographics of patients with and without COMP.

	mBIG 1	mBIG 2	mBIG 3
SAH	≤3 sulci and < 1mm	Single hemisphere or 1 – 3 mm	Bi-hemispheric or > 3 mm

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