

Retrospective chart review of intubation practice of emergency physicians in stroke patients

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Outline

- Background
- Methods
- Results
- Discussion
- Next steps

Background

- Historically, concerns about raising intracranial pressure in patients with either head injuries or stroke has lead physicians away from using medications typically used for Rapid Sequence Intubation
- As a result, there seems to be tremendous practice variation in the approach to these patients, especially from community providers

Objective

- To examine the practice patterns of emergency physicians in patients presenting with stroke or head injury requiring intubation
- Population: adults age 18 years or older presenting with stroke
- Intervention: intubation in the ED
- Control: none
- Outcomes: RSI use, first pass success during intubation, mortality

Methods

- All searches were performed by Information Controllers in Decision Support Services at HHS and SJH, once HiREB approval obtained
- Charts were found based on Most Responsible Diagnosis and if patients were intubated in the Emergency Department
- Search Period: 2012 to 2015

Chart Review

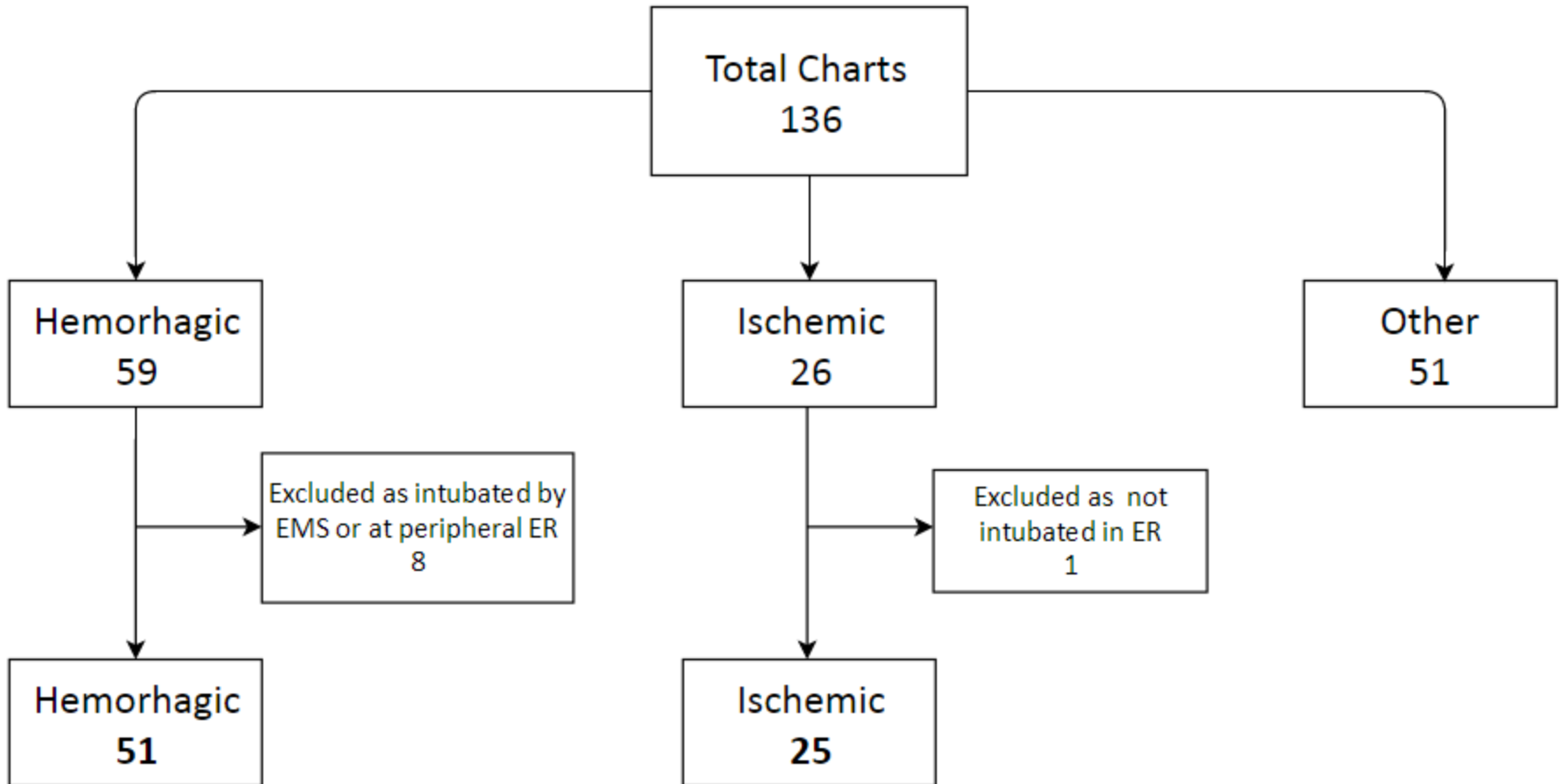
- St. Joseph's Hospital
 - Stroke Charts: 100
 - Hemorrhagic: 7
 - Ischemic: 4
 - Head Injury: 9
- This data was not used given extremely low numbers and high likelihood that results were not capturing the correct patients despite multiple different searches



Chart Review

- Hamilton Health Sciences
 - Stroke Charts: 136
 - Head Injury: 246
 - > 95% were polytrauma patients or trauma team activations and thus excluded as not representative of ER physician practice

Chart Review: HHS Stroke patients



Results - Demographics

	Hemorrhagic	Ischemic
N	51	25
Age	64.9	78.2
Male	32 (62.7%)	12 (48%)
Female	19 (37.3%)	13 (52%)
Length of Stay (d)	24.1	24.3
GCS	6.4	6.5
Deceased	35 (68.6%)	16 (64%)

Results - RSI

	Hemorrhagic	Ischemic
N	51	25
RSI used	41 (80.4%)	24 (96%)
RSI not used	10 (19.6%)	1 (4%)

Results – Induction Agent

	Hemorrhagic	Ischemic
N	51	25
Versed	6 (11.8%)	1 (4%)
Propofol	21 (41.2%)	7 (28%)
Ketamine	2 (3.9%)	1 (4%)
Etomidate	17 (33.3%)	15 (60%)
None	5 (9.8%)	1 (4%)

Results – Paralytic Agent

	Hemorrhagic	Ischemic
N	51	25
Succinylcholine	21 (41.2%)	12 (48%)
Rocuronium	22 (43.1%)	13 (52%)
None	8 (15.7%)	0 (0%)

Results – Sedation

	Hemorrhagic	Ischemic
N	51	25
Versed	24 (47.1%)	11 (44%)
Fentanyl	1 (1.9%)	1 (4%)
Propofol	7 (13.7%)	2 (8%)
Fentanyl and Versed	6 (11.8%)	8 (32%)
Fentanyl and Propofol	1 (1.9%)	0 (0%)
None/Not Documented	12 (23.5%)	3 (12%)

Results – First Pass Success

	Hemorrhagic	Ischemic
N (with RSI)	41	24
Yes	33 (80.5%)	15 (62.5%)
No/Not Documented	8 (19.5%)	9 (37.5%)
N (without RSI)	10	1
Yes	8 (80%)	0 (0%)
No/Not Documented	2 (20%)	1 (100%)

Results – Induction Agent and % Deceased

	Hemorrhagic	Deceased	Ischemic	Deceased
N	51	35	25	16
Versed	6	5 (83%)	1	0 (0%)
Propofol	21	13 (62%)	7	2 (28.5%)
Ketamine	2	1 (50%)	1	1 (100%)
Etomidate	17	12 (71%)	15	12 (80%)
None	5	4 (80%)	1	1 (100%)

Discussion

- Data from this study shows a diverse range of practice with regards to intubation, even within a single tertiary academic hospital
- Most commonly used agents for induction are propofol and etomidate, may see a change in trend in future years
- First pass success did not differ whether or not RSI was used, numbers may be too low to truly assess this
- A high percentage of patients are still not receiving sedation

Limitations

- Small data set from one hospital site
- Study did not evaluate immediate versus long term complications leading to mortality
- Documentation on ER charts was poorly done so key information might be missing

Next steps

- Expand search to include more hospital sites and longer time period
- Further analysis of the post-intubation complications caused by specific induction agents
- Education of healthcare providers of the need for a more standardized approach, including improved documentation and post-intubation sedation

Thank you! Questions?



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