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INTRODUCTION

Over the past few decades, what is meant by the term “stroke” has evolved over time. Currently stroke has been defined as a “neurological deficit attributed to an acute focal injury of the central nervous system by a vascular cause” according to the American Heart Association (AHA) and the American Stroke Association (ASA).¹ The mechanisms of stroke include cerebral infarction, intracerebral hemorrhage, and subarachnoid hemorrhage; often broken into simply two categories, hemorrhagic and ischemic. However, in the current emergency department setting, when the term “stroke” is used, it refers to an ischemic etiology.^{2,3} The AHA, ASA, and the Joint Commission (JCO) have established nationally accepted protocols outlining the exact steps physicians must take in order to insure the best health outcomes for patients with an ischemic stroke. However, this is not mirrored in established protocol for hemorrhagic strokes.

This poses a significant problem, as advances in intracranial hemorrhage treatment options have rapidly expanded and their utilization in a timely manner is of utmost importance, specifically in aneurysmal subarachnoid hemorrhages (aSAH). Endovascular coiling of aneurysms has become the mainstay of treatment for most aneurysmal SAH and are performed by neurointerventionalists. The same neurointerventionalists also perform thrombectomies for ischemic strokes.

Lack of specific and time sensitive protocol for aSAH diagnosis and treatment, significantly delays intervention for a diagnosis that possess a 25% risk of death and a 50% risk of neurological disability.⁴ We aim to offer supporting data from a community hospital to illustrate a need for establishing specific procedural outlines for the screening, diagnosis, and treatment of aneurysmal subarachnoid hemorrhages, as this specific etiology of hemorrhage can qualify for emergent therapy that is time sensitive and similar to ischemic strokes.

REFERENCES

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OBJECTIVE

- What is the prevalence of intracranial hemorrhages presenting to our institution?
- Moreover, what are the etiologies of intracranial hemorrhages and are there distinct clinical symptoms that are associated with the types of hemorrhages that require emergent treatment?
- Lastly, we plan to assess, of those that required endovascular therapy, what was the time to initiation?

METHODS

- A retrospective analysis of patients presenting to Ascension Genesys Hospital between January 2017- August 2020 that are within the hospitals previous stroke database.
- Inclusion criteria includes ≥18 years old, appropriate ICD code, CT imaging available, and within the hospitals stroke database with previously recorded data from the hospitals Case Report Form.
- ICD codes used: Ischemic Stroke, Transient Ischemic Attack (TIA), Intracerebral Hemorrhage, Subarachnoid Hemorrhage, and Not Stroke Related Diagnosis.
- Intracerebral hemorrhage and subarachnoid hemorrhage etiologies were further investigated. Patients with aneurysmal etiology were further investigated for their presenting symptom and if a stroke team was activated.
- Average “time to” diagnostic study and treatment initiation will be calculated for patients with aneurysmal subarachnoid hemorrhages and ischemic strokes.

DISCUSSION

Early identification of patients with aneurysmal SAH and including these patients in the stroke imaging and therapeutic pathway can significantly reduce the morbidity and mortality of these patients. Preliminary data shows that only 26.7% of aneurysmal SAHs were initiated into the Code Stroke protocol.

It is evident in the preliminary results that a large number of patients with SAH due to an aneurysmal etiology, present with the chief complaint of headache, and may not meet criteria for acute stroke upon presentation. Headaches are the 5th most common chief complaint in US emergency departments and are often not of a life-threatening etiology. Analysis must further be done to determine how this confounds the screening and diagnostic process of aSAH and the activation of a Code Stroke.

Further data analysis will determine the average “time to” diagnostic study and treatment initiation and compare this between aSAH and ischemic stroke patients.

PRELIMINARY RESULTS

- Total of 1825 patients between January 2017 and August 2020.
- All data was pulled from the stroke database and included information from the hospitals Case Report Form.

Clinical Diagnosis	Prevalence
Ischemic Stroke (n=1302)	71.3%
TIA (n=276)	15.1%
Intracerebral Hemorrhage (n=131)	7.2%
Subarachnoid Hemorrhage (n=42)	2.3%
Not Stroke Related Diagnosis (n=74)	4.1%

