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RETROSPECTIVE CHART REVIEW: Pediatric demographics in children presenting with acute neurological deficit concerning for acute ischemic stroke: An evaluation of the Stroke Alert process

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RETROSPECTIVE CHART REVIEW:
Pediatric demographics in children presenting with acute neurological deficit concerning for acute ischemic stroke: An evaluation of the Stroke Alert process

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Tiffany Barkley is a fourth year pediatric neurology resident with interest in vascular neurology and is a co-primary investigator on this study. Tiffany drafted and revised the final study protocol and designed the RedCap data collection tool for this study. She was involved in the IRB submission process and has been responsible for data entry into the database. She has been actively involved in data analysis and will be the lead author on the manuscript for this project.

Background, Objectives/Goal, Methods/Design, Results, Conclusions

Background: Acute ischemic stroke leads to significant morbidity and mortality in the pediatric population. Therefore, early recognition and evaluation of children who present with stroke like symptoms is prudent. Stroke protocols and teams have been created as a means to help identify and triage children who present with acute neurological symptoms concerning for stroke, including the Stroke Alert Process implemented at our institution. Since the implementation of these protocols, there have been few population-based studies that identified the patient characteristics, demographics, and clinical features of children who present with acute stroke-like symptoms. Identifying these characteristics can help stream-line current stroke protocols to help identify, triage, and treat patients who are at greatest risk for having childhood stroke.

Objectives/Goal: To describe the demographics and characteristics of patients who present with stroke like symptoms to CMH.

Methods/Design: Descriptive retrospective chart review of patients who presented to CMH from September 1, 2016-August 31, 2018 with concern for acute stroke who have the Stroke Alert Process and Powerplan activated.

Results: There were a total of 61 stroke activations from September 2016 through August 2018. 14/61 patients (23%) met final diagnosis of ischemic stroke or TIA. Of the patients that met the final diagnosis of ischemic stroke, the most common presenting symptom was unilateral weakness. Two were candidates for intervention with mechanical thrombectomy and none received tPA. Average age of all activations was 14years, while average age of patients who had final diagnosis of ischemic stroke or TIA was 4years. 61% of (37/61) activations were female and the most common racial demographic was Caucasian. Ischemic stroke/TIA was the most common diagnosis of all activations. The second leading diagnoses were seizure/Todd's paralysis and migraine comprising of 12/61 (20%), each. Other common diagnoses included psychogenic/conversion disorder (15%), complications of meningitis/encephalitis (6.6%), and oncologic process (5.0%). No intra-cranial hemorrhages were identified in this patient population.

Conclusions: Ischemic stroke or TIA comprised nearly one-fourth of all pediatric stroke activations and is the leading diagnosis in all activations obtained in this study. These findings are consistent with current reported literature. This data in conjunction with previous studies highlights the importance of developing protocols for early recognition and evaluation of children who present with stroke like symptoms.