Impact of Pharmacist Attendance on Acute Code Stroke with Administration of Alteplase

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BACKGROUND

- Stroke is a leading cause of mortality and morbidity in the United States, with mortality rates of approximately 150,000 per year. Timely treatment is essential in order to salvage the damaged tissue caused by restricted cerebral blood flow.1,2
- Alteplase, a thrombolytic agent, is the only medication proven to affect outcome after ischemic stroke.3
- Current American Heart Association/ American Stroke Association (AHA/ASA) guidelines recommend the administration of alteplase within 4.5 hours of symptom onset in acute ischemic stroke.4
- Previous studies have shown that early treatment during an acute ischemic stroke and that stroke initiatives have been associated with better outcomes and have expedited the door to alteplase administration times.5
- In June 2014, Saint Joseph Hospital implemented a code stroke protocol to assure rapid, consistent assessment and initiation of treatment for patients presenting with acute stroke symptoms.

PURPOSE

To evaluate if the addition of a pharmacist at code strokes help to expedite the process of alteplase administration.

CODE STROKE PROTOCOL

- Implemented June 2014
- Purpose: to assure rapid, consistent assessment and initiation of definitive treatment for patients presenting with acute symptoms of stroke
- Code stroke is activated when symptom onset is 0-6 hours or it is unknown
- Code stroke team:
  - Rapid response registered nurse (RRT)
  - Neurologist on call
  - House administrator
  - Lab
  - Pharmacist (07:00 – 21:00)

METHODS

STUDY DESIGN

June 2014 – December 2016

Patient Data Collection

- All data and patient information, including demographic and clinical characteristics, will be collected through the review of electronic medical records (EMR).
- During a code stroke, a rapid response registered nurse records the time that a code stroke was initiated, patient NIHSS and time points pertaining to alteplase order and administration. This information is then transferred into a spreadsheet, which will be used for data collection for this project.
- All patient identifiers will be removed to protect patient confidentiality.
- Patients included in the study will be assigned random study numbers. Data points collected through the EMR will be documented on an excel sheet, with coding to allow for statistical analysis.

DATA ANALYSIS

- Data will be tested for normality and statistical analysis carried out as follows:
  - Continuous data will be analyzed using an independent samples t-test or Mann Whitney U as appropriate
  - All categorical endpoints will be analyzed using a chi-square or Fisher’s exact test as appropriate
  - All tests will show significance with a p-value of < 0.05

OUTCOMES

Primary Outcome:

- Time to initial dose of alteplase from the time the decision is made to give alteplase

Secondary Outcomes:

- Time of code stroke call to initial alteplase dose
- Time of stroke onset to initial alteplase dose
- Correct alteplase dosing
- Hospital length of stay
- Baseline, 24-h post stroke, 24-h post stroke National Institutes of Health Stroke Scale (NIHSS)
- In-hospital mortality
- Total hospital cost

PARTICIPANTS

- Patients receiving alteplase between 7:00 – 21:00

Pace Criteria

- Age ≥ 18 years old
- Age ≥ 18 years old
- Acute ischemic stroke or TIA receiving alteplase
- Pregnancy
- Prisoner
- Body Mass Index (BMI)
- Gender
- Race

DATA COLLECTION

- Clinical Characteristics Collected
  - Chronic anticoagulation medication
  - Tobacco use
  - Previous TIA or stroke
  - Previous diagnosis of CAD
  - Hypertension
  - Atrial fibrillation
  - Diabetes Mellitus
  - Dyslipidemia

REFERENCES

1. Cdc.gov/stroke/
3. Activase® Alteplase package insert

DISCLOSURES

Authors of this presentation have the following to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation:

Yuyun Rahmasari: Nothing to disclose
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