

Improving Post Alteplase Documentation of Neurologic Assessments, Blood Pressure, Orolingual Angioedema, and Bleeding

Margaret Shatzel MSPH, RN, SCRNP

Objective

Improve compliance with DNV required post alteplase (tPA) documentation which includes BP monitoring and neurologic, orolingual angioedema (OLAE) and bleeding assessment.

Background

Symptomatic intracranial hemorrhage (sICH) & OLAE are potential complications associated with the administration of IV tPA.

Patients may experience sICH as well as systemic bleeding following administration of IV tPA. sICH is the most serious complication of IV thrombolytic therapy and occurs in approximately 6% of patients. Systemic bleeding (internal and external) can vary in severity and occurs in 1.6-6.4% of patients receiving IV tPA.

OLAE is an acute swelling of the lip and tongue. It is estimated that OLAE occurs in approximately 1.3 to 5% of patients that receive intravenous thrombolytics. Incidence is higher in patients taking ACE-inhibitors. It can be life-threatening if not identified early and treated.



BP monitoring and treatment as well as frequent neurologic, OLAE and bleeding assessments allow for prevention and early identification of sICH and OLAE.

Following our DNV Primary Stroke Center Survey in November 2017, documentation of assessments was identified as an area of opportunity for improvement.

Methods

Based on recommendations from DNV PSC survey and the 2018 AHA/ASA Guidelines for the Early Management of Patients with Acute Ischemic Stroke, a quality improvement project was initiated to increase compliance with post alteplase documentation.

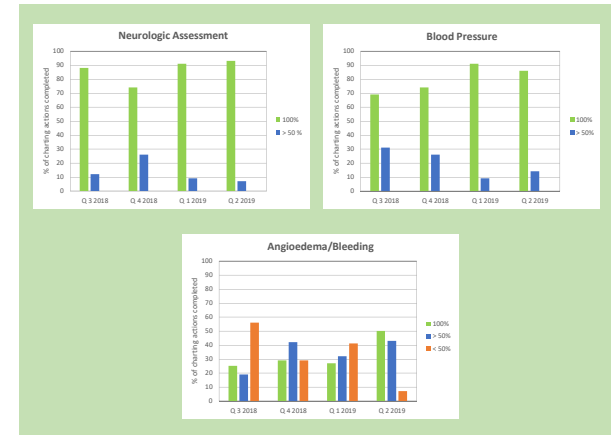
Interventions:

- Post thrombolytic order set was updated to include angioedema and bleeding assessments
- All required components of post tPA documentation were merged to one electronic medical record (EMR) flowsheet
- A “Post-Stroke Intervention Patient Care – First 24 Hours” grid was created outlining the required documentation, frequency of assessments and EMR flowsheet to be used (Handout)
- Order-sets were created for Post Alteplase Angioedema and Post Alteplase Reversal
- Concurrent chart review was done with “real-time” education to nurses and on-going feedback to the ICU Professional Practice Leader (PPL)

On-going strategies:

- Continuous PDCA to identify gaps and opportunities for improvement
- Improvement ideas brought forward to the ICU PPL and IT department for implementation
- One to one “real-time” education to nurses by ICU Professional Practice Leader and Stroke Coordinator
- ICU Charge Nurse accountability
- Monthly Stroke Nursing Grand Rounds
- SCRNP Prep Course offered twice per year
- Proposal to system to implement a Post-Stroke Intervention Protocol linked to the order-set and available in the EMR

Results



Conclusion

100% compliance with post alteplase documentation requirements presents a challenge for our institution. Improvement strategies including EMR changes, one to one nurse education, and resource packet have shown modest improvement. Sustainability and innovative strategies will be essential to increase compliance. Improving post alteplase documentation remains a priority for our Stroke Center.

References

- Miller DJ, Simpson JR & Silver B. Safety of thrombolysis in acute ischemic stroke: A review of complications, risk factors, and newer technologies. *The Neurohospitalist*. 2011 1(3); 138-147.
- Myslimi F, Capparas F, Dequarte-Ponchelle N, et al. Orolingual angioedema during or after thrombolytics for cerebral ischemia. *Stroke*. 2016 July; 1825-1830.
- O'Carroll CB & Aquilar MI. Management of postthrombolysis hemorrhage and orolingual angioedema complications. *The Neurohospitalist*. 2015 July; 133-141.
- Powers WJ, Rabinstein AA, Ackerson T, et al. 2018 Guidelines for the early management of patients with acute ischemic stroke. *Stroke*. 2018 March; e1-e48.
- Yaghi S, Willey JZ, Cucchiara B, et al. Treatment and outcome of hemorrhagic transformation after intravenous alteplase in acute ischemic stroke. *Stroke*. 2017 December; e343-e357.