

EMERGENCY DEPARTMENT

Acute Stroke Protocol

UHS/UTHSCSA

ED Staff identifies a **STROKE ALERT**

- One or more finding on the Cincinnati stroke scale:
 - Facial Droop – abnormal
 - Arm Drift – abnormal
 - Speech – abnormal**AND**
- < 6 hrs. from onset of symptoms
AND
- Blood sugar between 60 and 600mg/dl

ED staff calls **8-2222** for **STROKE ALERT** activation and provides name of person initiating the call, patient location and call back number. This will activate the Stroke Team pagers, Neuro Resident and Stroke Service. Faculty will respond.

Goal: 15 minutes from Stroke Alert to Stroke Team arrival at bedside

ED obtains a STAT non-contrast CT head, CXR, EKG, CRITICAL stroke labs, finger stick glucose, starts 2 IV's, obtains vital signs (treat if necessary), oxygen saturation, neuro checks, place in monitored bed, monitor airway, NIHSS, keep NPO, obtain history, last known well time and weight.

If ED CT scanners are unavailable, go to 2nd floor scanner in Rio Tower. If two stroke alerts occur simultaneously, cases will be managed with additional staff as needed for support.

Goal: 45 minutes arrival to result for CT, CXR, EKG and Lab

Inclusion criteria < 0-3 hrs and 3-4.5 hrs from symptom onset

- * Diagnosis of ischemic stroke causing measurable neurological deficit
- * Onset of symptoms <0-3 hrs and 3-4.5 hrs hours before beginning treatment
- * Aged ≥ 18 years

Exclusion criteria (contraindications) 0-3 hr and 3-4.5 hr treatment windows

- * Symptoms suggest subarachnoid hemorrhage
- * IV or IA thrombolysis/thrombectomy at an outside hospital prior to arrival
- * Arterial puncture at non-compressible site in previous 7 days
- * History of previous intracranial hemorrhage
- * Intracranial neoplasm, arteriovenous malformation, or aneurysm
- * Recent intracranial or spinal surgery or significant head trauma, or prior stroke in previous 3months
- * Elevated blood pressure (systolic > 185 mm Hg or diastolic > 110 mm Hg) despite treatment
- * Active internal bleeding
- * Acute bleeding diathesis, including but not limited to platelet count <100,000/mm; heparin received with 48 hours, resulting in abnormally elevated aPTT greater than the limit or normal; current use of anticoagulant with INR >1.7 or PT >15 seconds; current use of direct thrombin inhibitors or direct factor Xa inhibitors with elevated sensitive laboratory tests (such as aPTT, INR, platelet count, and ECT; TT; or appropriate factor Xa activity assays).
- * Blood glucose concentration < 50 mg/dL (2.7 mmol/L)
- * CT demonstrates multi-lobar infarction (hypodensity >1/3 cerebral hemisphere)

Relative exclusion criteria (warnings) 0-3 hr and 3-4.5 hr treatment windows

- * Care team unable to determine eligibility
- * Stroke severity too mild
- * Pregnancy
- * Seizure at onset with postictal residual neurological impairments
- * Major surgery or serious trauma within previous 14 days
- * Recent gastrointestinal or urinary tract hemorrhage (within previous 21 days)
- * Recent acute myocardial infarction (within previous 3 months)
- * Patient/family refusal
- * Life expectancy <1 year or severe co-morbid illness or CMO on admission

Possible IV alteplase candidate:

Review history, last known well time and criteria for IV alteplase.

Not an IV alteplase candidate:

Document

Hemorrhagic Stroke:

Consider neurosurgery Consult

Large Vessel Occlusion:

See Code Neuro pathway

Continue neuro checks and consider anti-thrombotic therapy or neurosurgical intervention. Admit to appropriate level of

Physician reviews patient condition with patient and/or family and discusses risks and benefits of IV alteplase. Discussion and criteria used to determine administration of IV alteplase are documented by the provider. Neurology places order for IV alteplase in Sunrise. IV alteplase is weight-based and may be given by the Stroke neurology physician, ED RN or Rapid Response RN. Call Pharmacy at **743-4047** for support if needed.

Consider insertion of NGT, foley, central line or PICC prior to IV alteplase administration or hold 24 hours post IV alteplase infusion. May place ≤ 24 hours if benefits > risks.

Document VS and neuro checks q 15 min for the first 2 hours after IV alteplase initiation, then every 30 minutes x 6 hours then hourly x 16 hours (until 24 hours post IV alteplase initiation).

Patient is admitted to monitored Stroke Unit bed with a 1:2 RN/Patient ratio.

EKG monitoring

Maintain SBP < 180 and DBP < 105mm Hg

No heparin, warfarin, or antiplatelet medication for 24 hours post alteplase initiation.

Monitor for bleeding. Initiate anti-thrombotic therapy 24 hours after alteplase if appropriate.

Patient is to remain NPO until after passes dysphagia screen.

If angioedema suspected, please reference the **“Management of Angioedema protocol”**

If ICH suspected, please reference **“Management of symptomatic intracranial bleeding after IV Alteplase”**

1. Powers, W. J., Rabenstein, A. A., Ackerson, T., *et al.* (2018). 2018 guidelines for the early management of patients with acute ischemic stroke: A guideline for healthcare professionals from the American Heart Association/American Stroke Association. *Stroke*, doi: 10.1161/STR.0000000000000158
2. Demaerschalk, B. M., Kleindorfer, D. O., Demchuk, A. M., *et al.* (2016). Scientific rationale for the inclusion and exclusion criteria for intravenous alteplase in acute ischemic stroke: A statement for healthcare professionals from the American Heart Association/American Stroke Association. *Stroke*, doi: 10.1161/STR.0000000000000086