Stroke Guidelines for Acute Stroke

Clinical Presentation of Stroke

CINCINNATI PREHOSPITAL STROKE SCALE

- Facial Droop: Normal: Both sides of face move equally/ Abnormal: One side of face does not move at all
- Arm Drift: Normal: No downward drift when arms outstretched/ Abnormal: One arm drifts compared to the other
- Speech: Normal: Patient uses correct words with no slurring / Abnormal: Slurred or inappropriate words or mute

Interpretation: If any 1 of these 3 signs is abnormal, the probability of a stroke is 72%

"Five Sudden, Severe Symptoms" of stroke include:

- **Sudden** numbness or weakness of the face, arm, or leg
- **Sudden** confusion, difficulty talking or understanding
- **Sudden** vision disturbance
- **Sudden,** severe difficulty walking, dizziness, loss of coordination or balance
- **Sudden,** severe headache

Initial Evaluation

□ Last Known Well (Onset of symptoms is defined as the last time patient documented to be normal before symptoms started; i.e. if awakened with stroke, last known well is considered the time patient went to sleep the night before, etc.)
□ Non-Contrast CT of Head
□ Vital Signs
□ National Institute of Health Stroke Scale (NIHSS) – see appendix A
□ Patient Weight
□ Finger Stick Glucose
□ Labs: CBC & platelet count, PT, PTT, INR, Serum electrolytes, BUN, Creatinine, Troponin

Transfer Plan

- Have a transfer plan for higher level of stroke care
- Consider treatment plan for stroke patients arriving with a Last Known Well of ≤ 24 hours
- LKW ≤ 4.5 hour, treat with Alteplase (tPA) if eligible and transfer if appropriate
- In patients, treated or untreated with Alteplase, who have persistent significant neurologic deficits and are less than 24 hours following stroke onset, consider immediate transfer to higher level of stroke care
- Hemorrhagic Strokes, prepare for immediate transfer for Neurosurgery services.

******** ALTEPLASE TREATMENT SEE BACK*****

Criteria for IV Alteplase (t-PA) Thrombolytic Treatment

□ Age older than 18 years
□ Clinical presentation and neurological deficit consistent with acute stroke
□ Significant and persistent neurologic deficits
□ Onset of symptoms well established and started less than 4.5 hours prior to Alteplase (t-PA) infusion
□ Head CT shows no hemorrhage, subdural hematoma, or tumor
□ Blood Glucose >50

Alteplase (t-PA) Dosing and Administration

□ Order Drug: Intravenous Alteplase (t-PA) for ischemic stroke
□ Dose: 0.9mg/kg body weight (Maximum 90mg). Dose will be calculated and verified by two providers

- Drug will arrive in two vials/bags (one bolus, one infusion)
- 10% of dose given as a bolus over one minute
- Remainder of dose infused over 60 minutes
- **After** the Alteplase (t-PA) infusion is complete, **infuse 50ml of 0.9% normal saline** at the same infusion rate as the Alteplase (t-PA) infusion rate in order to infuse the remaining drug in the tubing

IV Alteplase (t-PA) exclusion Criteria for treatment from 0-4.5 hours from symptom onset:

Clinical Presentation Exclusion Criteria
□ Symptoms suggest subarachnoid hemorrhage
Blood Pressure Exclusion Criteria
□Persistent elevated blood pressure (systolic >185mm Hg or diastolic >110 mm Hg) **despite treatment** **see treatment options*
History Exclusion Criteria
□ Previous history of intracerebral hemorrhage
□ History of GI hemorrhage in the past 3 weeks
□ Head trauma in preceding 3 months
□ Acute bleeding diathesis (low platelet count <100,000; increased PTT >40 sec; INR >=1.7;
□ Use of Factor Xa inhibitors or Thrombin inhibitors, if a dose has been received within 48 hours.
Head CT (non-contrast) Exclusion Criteria
□ Evidence of non-ischemic intracranial pathology: tumor, abscess or metastases
□ Evidence of intracranial hemorrhage: parenchymal, subarachnoid, subdural, epidural
□ Early signs of large cerebral infarction: edema, hypodensity, mass effect

***BP treatment (systolic >185mmHg or diastolic >110 mm Hg)**

- Labetalol 10 to 20 mg IV over 1 to 2 minutes; may be followed by continuous IV infusion 2-8, mg/min;
- Nicardipine infusion, 5 mg/hour, titrate up by 2.5 mg/hour at 5 to 15 minute intervals, maximum dose 15mg/hour; when desired blood pressure attained, reduce by 3 mg/hour

NOTE: Once BP under control treat with Alteplase (t-PA) and continue to monitor BP

Citations
-Demaerschalk, B. M., MD, Msc, FRCPC, FHAHA, et al (2016). Scientific Rationale for the Inclusion and Exclusion Criteria for Intravenous Alteplase in Acute Ischemic Stroke. *Stroke*. doi:10.1161/.STR.0000000000000086
-Powers, W.J., Rabinsteinm A.A., Ackerson, T., Jr., Adeoye,O.M, Becker, K., Biller, J.., . . . Tirschwell, D.L. . (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.000000000000158

4.2018