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

Criteria for IV Alteplase (t-PA) Thrombolytic Treatment

☐ ☐ Age older than 18 years
☐ Clinical presentation and neurological deficit consistent with acute stroke
☐ 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

********EXCLUSION CRITERIA FOR ALTEPLASE SEE BACK*****

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

Exclusion for IV Alteplase (t-PA) Thrombolytic Treatment

IV Alteplase (t-PA) exclusion Criteria for treatment from 0-4.5 hours from symptom onset:	**Relative Exclusion Criteria (Warnings) 0-3 hr treatment window. Consider risk vs. benefit if any of these are present:**	**Relative Exclusion Criteria (Warnings) 3-4.5 hr treatment window. Consider risk vs. benefit if any of these are present:**
☐Persistent elevated blood pressure (systolic >185mm Hg or diastolic >110 mm Hg) **<u>despite treatment</u>** **see treatment options* ☐ Recent intracranial or spinal surgery or significant head trauma ☐ History of previous intracranial hemorrhage, intracranial neoplasm, arteriovenous malformation, or aneurysm ☐ Active internal bleeding ☐ Acute bleeding diathesis (low platelet count <100,000; increased PTT >40 sec; INR >=1.7; or use of New Oral Anticoagulant) ☐ Symptoms suggest subarachnoid hemorrhage ☐ CT demonstrates multilobar infarction (hypodensity >1/3 cerebral hemisphere) ☐ Arterial puncture at non-compressible site in previous 7 days ☐ Blood glucose concentration <50 mg/dL (2.7 mmol/L)	☐ Care-team unable to determine eligibility ☐ Life expectancy < 1 year or severe co-morbid illness on admission ☐ Prior stroke in previous 3 months ☐ Pregnancy ☐ Patient/family refusal ☐ Rapid improvement **with** return to normal ☐ Stroke severity too mild, no deficits present. ☐ Recent acute myocardial infarction (within previous 3 months) ☐ Seizure at onset with postictal residual neurological impairment ☐ Major surgery or serious trauma within previous 14 days ☐ Recent gastrointestinal or urinary tract hemorrhage (within previous 21 days)	☐ Age greater than 80 years ☐ Severe stroke (NIHSS >25) ☐ History of prior stroke AND diabetes ☐ Any anticoagulant use independent of INR

***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

Post Stroke Care

- For patients not treated with alteplase (t-PA) and a severe stroke consider immediate transfer to higher level of stroke care: Primary Stroke Center or Comprehensive Stroke Center
- For patients treated with alteplase (t-PA) and symptom onset < 6 hours and NIHSS $\geq$ 6 and/or RACE $\geq$ 4 consider immediate transfer to higher level of Stroke Care for possible mechanical thrombectomy: Primary Stroke Center or Comprehensive Stroke Center

<u>Citations</u>
-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
-Jauch, E. C., Saver, J. L., Adams, H. P., Jr., Bruno, A., Connors, J., Demaerschalk, B. M., . . . Yonas, H. (2013). 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.0b013e318284056a