



NE Acute Stroke Treatment Guideline

0-15 minutes	Patient Name: _____ Date of Birth: _____ ED Arrival: Date _____ Time _____ Last Known Well: Date _____ Time _____ <input type="checkbox"/> Activate Stroke Response Team <input type="checkbox"/> Prepare for Stat CT <input type="checkbox"/> Consider activating transport	Assess the following: <input type="checkbox"/> BP _____ mm/hg <input type="checkbox"/> Pulse _____ bpm <input type="checkbox"/> O2 Saturation _____ % <input type="checkbox"/> Bedside Glucose _____ mg/dL (Do not repeat if completed by EMS. Treat if <60) <input type="checkbox"/> VS q 15 min with neuro checks <input type="checkbox"/> Continuous cardiac monitoring <input type="checkbox"/> NIHSS on arrival _____	<input type="checkbox"/> O2 to keep SATS >94% (do not administer O2 if patient non-hypoxic) <input type="checkbox"/> Keep NPO (including meds and ice chips) <input type="checkbox"/> Establish 1-2 large bore IVs <input type="checkbox"/> Normal Saline 0.9% TKO *Do not delay CT scan for any of the preceding
15-45 minutes	<input type="checkbox"/> CT Scan head w/o contrast <i>(Door to CT scan goal <25 minutes)</i> <input type="checkbox"/> Request stat read of CT scan <input type="checkbox"/> Stroke Panel: CBC, Platelets, PT-INR, PTT, BMP, Troponin (results not needed prior to administration of thrombolytic therapy) <input type="checkbox"/> Serum pregnancy test for females of childbearing age <input type="checkbox"/> 12L ECG if time allows (not needed prior to administration of thrombolytic therapy) <input type="checkbox"/> Weight _____ kg	CT Scan Results: <i>(Door to CT scan results goal <45 minutes)</i> <input type="checkbox"/> No acute findings <input type="checkbox"/> New Ischemic Stroke <input type="checkbox"/> Hemorrhage <input type="checkbox"/> Other _____ <input type="checkbox"/> Consult with accepting neurologist once CT scan results obtained. Send images if able. <input type="checkbox"/> Arrange transport plans if not already done	<input type="checkbox"/> If CT is negative for hemorrhage or other acute findings, complete Thrombolytic Alteplase (tPA) Therapy Guidelines checklist to determine IV Alteplase eligibility <input type="checkbox"/> If Blood Pressure is >185/110, refer to BP Management section below.
45-60 minutes	IV Alteplase Eligible Ischemic Stroke Patient <input type="checkbox"/> IV Alteplase 0.9 mg/kg (max dose 90 mg) Total IV Alteplase. Total Dose _____ mg <input type="checkbox"/> 10% total IV Alteplase dose as bolus over one minute. Bolus Dose _____ mg Time of bolus _____ <input type="checkbox"/> Remainder of IV Alteplase over 60 minutes Rate of infusion _____ ml/hr <input type="checkbox"/> Follow IV Alteplase with 50 ml Normal Saline 0.9% at same rate as IV Alteplase infusion <input type="checkbox"/> VS and neuro checks q 15 min during infusion, then q 15 min x 2 hr, q 30 min x 6 hr, then hourly until 24 hours after treatment <input type="checkbox"/> If BP > 180/105, refer to BP Management section below <input type="checkbox"/> Repeat head CT if neuro status declines <input type="checkbox"/> If symptom onset <24 hours, screen for large vessel occlusion (see right) <input type="checkbox"/> No anticoagulant/antiplatelet for 24 hours <input type="checkbox"/> NIHSS post infusion _____	Tenecteplase Eligible Ischemic Stroke Patient <input type="checkbox"/> IV Tenecteplase 0.25mg/kg (max dose 25 mg) <input type="checkbox"/> IV Push over 5 seconds <i>Not compatible with dextrose containing solutions. If dextrose containing infusion, flush the line with normal saline before and after the injection to ensure the tenecteplase is fully administered</i> <input type="checkbox"/> VS and neuro checks q 15 min during infusion, then q 15 min x 2 hr, q 30 min x 6 hr, then hourly until 24 hours after treatment <input type="checkbox"/> If BP > 180/105, refer to BP Management section below <input type="checkbox"/> Repeat head CT if neuro status declines <input type="checkbox"/> If symptom onset <24 hours, screen for large vessel occlusion (see right) <input type="checkbox"/> No anticoagulant/antiplatelet for 24 hours NIHSS post infusion _____	Non-Thrombolysis Eligible Ischemic Stroke Patient <input type="checkbox"/> ASA 300 mg PR <input type="checkbox"/> If BP >220/120, consult with accepting neurologist regarding possible BP management <input type="checkbox"/> If symptom onset <24 hours, screen for one or more of the following criteria indicating a possible large vessel occlusion (LVO): <input type="checkbox"/> NIHSS >6 Score _____ <input type="checkbox"/> RACE ≥5 Score _____ <input type="checkbox"/> Signs of cortical stroke: confusion, aphasia, neglect, visual field changes, head or gaze deviation <input type="checkbox"/> If symptom onset is >24 hours consult neurologist regarding possible treatment options
BP Management	If ischemic stroke patient has a BP >185/110, lower to acceptable range (SBP 140-180) with agents below prior to administration of Alteplase. For hemorrhagic stroke, lower SBP to <140 with agents below. <input type="checkbox"/> Labetalol 10-20 mg IV over 1-2 minutes, may repeat x 1 OR <input type="checkbox"/> Nicardipine infusion: 5 mg/hr, titrate up by 2.5 mg/hr at 5-15 min intervals, max dose 15 mg/hr OR <input type="checkbox"/> Consider other agents (hydralazine, enalapril, clevidipine) when appropriate. AVOID NITRATES.		
	If BP > 180/105 during and within 24 hours after treatment with Alteplase, administer the following: <input type="checkbox"/> Labetalol 10 mg IV followed by continuous IV infusion 2-8 mg/min OR <input type="checkbox"/> Nicardipine 5 mg/hr IV, titrate up to desired effect by 2.5 mg/hr q 5-15 min, max 15 mg/hr		



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Hemorrhagic Stroke Patient

- If SBP between 150-220 administer medications as listed in BP management section below to achieve BP <140/90.
- If SBP >220 mmHg, consult neurologist regarding BP management.
- If patient is on oral anticoagulant, follow local ED protocol regarding use of reversal agents
- Elevate HOB 30 degrees

Discuss possible anti-seizure and ICP lowering measures with consulting neurologist

Disposition

- Transfer patient to Primary Stroke Center or thrombectomy certified center: Primary Stroke Center, Thrombectomy Capable Stroke Center or Comprehensive Stroke Center as soon as EMS team is available
- If patient meets hemorrhagic or LVO criteria, consult neurologist regarding most appropriate transfer destination.

Report the following to accepting hospital staff:

- H&P, Last Known Well, Medications, Lab results
- NIHSS at Discharge _____

Contact name: _____

Cell #: _____



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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