ND ACUTE STROKE TREATMENT GUIDELINE

0-15 minutes

- Assess the following:
  - BP ____________ mm/hg
  - Pulse ______________ bpm
  - O2 Saturation __________ %
  - Bedside Glucose ____________ mg/dL
  - NIHSS post infusion _________ hours

- CT Scan Results:
  - Door to scan goal <45 minutes
  - No acute findings
  - New Ischemic Stroke
  - Hemorrhage
  - Other _______
  - Signs of cortical stroke: confusion, aphasia, neglect, visual field changes, head or gaze deviation
  - If symptom onset is >24 hours consult neurologist regarding possible treatment options

45-60 minutes

- If CT is negative for hemorrhage or other acute findings, complete Thrombolytic Alteplase (tPA) Therapy Guidelines checklist to determine IV Alteplase eligibility
- If patient is ruled ineligible for IV Alteplase due to BP >185/110, refer to BP Management section below.

IV Alteplase Eligible Ischemic Stroke Patient

- IV Alteplase 0.9 mg/kg (max dose 90 mg)
- Total IV Alteplase. Total Dose ________ mg
- 10% total IV Alteplase dose as bolus over one minute. Bolus Dose ________ mg. Time of bolus ________
- Remainder of IV Alteplase over 60 minutes Rate of infusion ________ ml/hr
- Follow IV Alteplase with 50 ml Normal saline 0.9% at same rate as IV Alteplase infusion
- 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
- If BP > 180/105, refer to BP Management section below
- Repeat head CT if neuro status declines
- If symptom onset <24 hours, screen for large vessel occlusion (LVO)
- No anticoagulant/antiplatelet for 24 hours
- NIHSS post infusio________

Non-IV Alteplase Eligible Ischemic Stroke Patient

- Aspirin 300 mg PR
- If BP >220/120, consult with accepting neurologist regarding possible BP management
- If symptom onset <24 hours, screen for one or more of the following criteria indicating a possible large vessel occlusion (LVO):
  - NIHSS >6 Score
  - FAST ED >4 Score
  - Signs of cortical stroke: confusion, aphasia, neglect, visual field changes, head or gaze deviation
- If symptom onset is >24 hours consult neurologist regarding possible treatment options

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

BP

- If BP >180/105 during and within 24 hours after treatment with Alteplase, administer the following:
  - Labetalol 10 mg IV followed by continuous IV infusion 2-8 mg/min OR
  - Nicardipine 5 mg/hr IV, titrate up to desired effect by 2.5 mg/hr q 5-15 min, max 15 mg/hr

Disposition

- Transfer patient to Primary Stroke Center or thrombectomy certified center: Primary Plus 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.

If ischemic stroke patient is ruled ineligible for IV Alteplase due to BP>185/110, lower to acceptable range (SBP 140-180) with agents below.

- For hemorrhagic stroke, lower SBP to <140 with agents below.
  - Labetalol 10-20 mg IV over 1-2 minutes, may repeat x1 OR
  - Nicardipine infusion: 5 mg/hr, titrate up by 2.5 mg/hr up to 5-15 min intervals, max dose 15 mg/hr OR
  - Consider other agents (hydralazine, enalapril, clevidipine) when appropriate. AVOID NITRATES.

- Report the following to accepting hospital staff:
  - H&P, Last Known Well, Medications, Lab results, Vital Signs
  - NIHSS at Discharge _________
- Contact Name:____________________________________________
- Cell Number:____________________________________________
Patient experiencing one or more of the following stroke signs and symptoms:

- **Balance** - Sudden trouble walking, dizziness, loss of balance or coordination. Perform bilateral index finger to nose test and bilateral heel to shin test.
- **Eyes** - Sudden double vision or trouble seeing out of one or both eyes. Assess 4 quadrants of visual field.
- **Face** - Sudden drooping or numbness on one side of the face. Ask the person to smile or show teeth.
- **Arm** - Sudden numbness or weakness of the arm, especially on one side of the body. Ask the person to close eyes, raise and extend both arms with palms up. Does one arm drift downward?
- **Speech** - Sudden confusion, trouble speaking or understanding. Have patient a repeat phrase such as “You can’t teach an old dog new tricks”.
- **Time to dispatch transport** - Consider timeliness of ground vs. air options
- **Sudden severe headache with no known cause.**

Contact nearest tertiary hospital to consult with neurologist regarding appropriate transfer destination. In most cases patient will be transferred to closest stroke ready hospital.

**PATIENT SHOULD BE TRANSPORTED AS SOON AS EMS UNIT IS AVAILABLE**

**Door-in to Door-out Goal <30 minutes**

1. Obtain vital signs stat and every 15 minutes
2. Monitor pulse oximetry and administer oxygen as needed to maintain a SpO2 of >94%; starting at 2L/min per nasal cannula. Oxygen is not recommended if patient able to maintain SpO2 >94% on room air.
3. Assess bedside glucose. Treat if <60.
4. Perform neuro assessment and FAST ED scoring if able (consider utilizing FAST ED app)
5. Establish last known well (LKW) - the time when the patient was last known to be neurologically normal. If the patient was sleeping and wakes up with symptoms, time last known well is the last time the patient was seen to be normal (i.e. before bed).
6. Keep NPO (including ice chips and meds)
7. Keep HOB elevated at 30 degrees
8. Insert 1-2 large bore IV sites if able (AC preferred). Maintain IV patency with 0.9% Normal Saline at TKO.
9. Acquire medical history. Determine if patient takes anticoagulants or has previous history of stroke.
10. Obtain weight in kg if able.
11. If time allows, complete Thrombolytic Alteplase (tPA) Therapy Guidelines checklist to determine IV alteplase eligibility.

Report the following to accepting provider or nurse:

- Symptom onset/Last Known Well
- Results of neuro assessment
- Vital Signs
- Anticoagulant status
- Weight in kg if available
- Blood glucose results (send with patient or fax)
- Medical History
- Contact information for family

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ND STROKE TRIAGE AND TRANSFER GUIDELINE

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