



Stroke (CVA)

Austin County
EMS Protocol & Guideline

Version: **1.0**

Date: **04/2019**

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Overview: Stroke/CVA patients are considered a time sensitive patient and a primary or comprehensive stroke center is the definitive care destinations which these patients benefit from early arrival. Only patients who are viable or suspected to be viable for treatment(s) should be transported emergency, all other patients should be non-emergency transport.

Definition: A Stroke is the rapid deterioration of brain function due to a disturbance in blood supply to the brain. This can be caused from ischemia which is a lack of blood flow from a blockage, or hemorrhage which is the leakage of blood. As a result, the affected area of the brain cannot function causing speech impairment, hemiparesis, paralysis and visual changes. The goal of the Provider is to quickly recognize the signs and symptoms, determine the onset, and expedite transport to a Stroke Center, or the closest appropriate facility capable of diagnosing, treating, and managing the patient.

EMT

- **Oxygen** administration as appropriate to the patient presentation, SPO2 must be maintained greater than 95%
- **Airway Adjuncts** (Supraglottic Airway, OPA, NPA), EtCO2 monitoring appropriate to patient presentation
- Obtain **BGL**
- 12 Lead ECG acquisition
- NPO and keep head elevated at least 30 degrees
- Obtain a time frame of when the patient was last seen normal

AEMT

- Establish IV / IO of Normal Saline
- **Dextrose 25% or 50% IV 25g** – if blood sugar is less than 60, use with caution. Do not administer if a cerebral bleed is suspected
- **Ondansetron** – 4mg IV, may repeat once

Paramedic

- **Labetalol** 10 mgs or **Metoprolol** 5 mg – if the patients SBP is greater than 200 mmHg and/or DBP is greater than 130 – Do not repeat *******Do not decrease BP greater than 20%*******

Left (Dominate) Hemisphere

- Right Visual Field Deficit
 - Right Hemiparesis
 - Right Hemisensory Loss
 - Left Gaze Deviation
 - Aphasia - Expressive or Receptive
- Typical Sign: Right Side Aphasia**

Right (Non-Dominate) Hemisphere

- Right Gaze Deviation (right gaze preference)
 - Left Hemi-inattention (neglect)
 - Left visual field deficit
 - Left Hemiparesis
 - Left Hemisensory Loss
- Typical Sign: Left Side, Neglect**

Cerebellum

- Dyscoordination
- Imbalance with a wide based gait

Brainstem

- Quadriplegia
 - Sensory loss in all 4 limbs
 - Crossed signs (face&body)
 - Hemiparesis
 - Hemisensory
 - Vertigo
 - Oropharyngeal Weakness
 - Dysarthria
 - Dysphagia
 - Decreased Consciousness
 - Nausea & Vomiting
 - Hiccups
 - Abnormal Respirations
 - Abnormal Eye Movement
- Typical Sign: Both sides**

Symptoms Suggestive of Hemorrhage

Subarachnoid – Intolerance to light, neck stiffness and pain

Intracerebral – Focal signs such as hemiparesis – similar to an ischemic stroke

PEARLS

- Blood Pressure decrease in the first 24 hrs of an ischemic stroke is associated with worse neurological outcomes.
- If intubation is necessary action must be taken to reduce the stimulation associated with laryngoscopy
- Use **only** the amount of **Oxygen** required to achieve adequate oxygenation
- Consider utilization of Air Medical services for rapid transport for outlying/extended transport situations.
- Consider administering ½ dose post intubation non-depolarizing paralytics to reduce duration of paralyzation to allow for neuro assessment by the ED Physician
- Do not administer aspirin
- Treat Hypoglycemia and Seizures according to protocol

TRANSPORT PEARLS

- **Indications for COMPREHENSIVE Stroke Center or a Stroke Center (Level 1 Stroke Alert):**
 - Patients suspected to be experiencing a *hemorrhagic stroke* (acute onset of severe deficits and/or gaze shift)
 - Younger patients (or less than 80 years old with no significant co-morbidities)
 - Patients whose symptom onset cannot be determined (i.e. during sleep) or symptoms >5 hours in duration
 - Any stroke presentation with unresolving neuro deficits where mechanical thrombectomy (neurosurgery) may be needed
- **The following patients <types> would benefit from rapid transport to a PRIMARY Stroke Center (Level 2 Stroke Alert):**
 - Patients with onset of neurological signs/symptoms NO GREATER than 5 hours
 - Patients that meet criteria to receive thrombolytics for ischemic stroke