SUSPECTED ACUTE STROKE

Children's HOSPITAL & MEDICAL CENTER

Risk Factors
- Sickle cell disease
- Congenital or acquired heart disease
- Head & neck infections
- Systemic conditions such as inflammatory bowel disease & autoimmune disorders
- Head trauma

Notes
- Brain imaging should occur ASAP after a stroke.
- Imaging should not be delayed for STAT labs, ECG, additional testing & establishing intravascular access.
- Staff should review Policy PTCR74h Transporting/transferring a patient within the hospital & ensure patient is ready for transport to radiology as soon as imaging staff are available to begin exam.
- RN will need to accompany patient to radiology for imaging; especially if any sedation is given.

Outside admissions/transfers to CHMC for suspected stroke
- Call physicians priority line
- Call Center to page on-call neurologist

Imaging Notes
- MRI of the brain w/o contrast is preferred as first line imaging in suspected acute stroke cases that are < 24 hours old
  - In cooperative patients, the MRI brain stroke protocol will take < 10 minutes & is performed w/o sedation
  - The MRI brain stroke protocol includes Axial DWI, FLAIR, FFE (GRE), & Sagittal T1 Single Shot
  - Contrast enhanced sequences have been omitted to save time & to avoid delays secondary to IV placement which would be needed for contrast.
- If MRI is not available within approximately 1 hour of starting the stroke protocol, if the patient requires sedation, or if patient has contraindications to MRI, clinicians should instead consider CT head w/o contrast
- Additional imaging of the brain &/or vascular anatomy may at times be necessary & should be considered by clinicians on a case-by-case basis after the initial brain imaging report is received from radiologist, taking into account patient condition & availability of resources

Signs & symptoms of acute stroke include:
- Focal neurologic deficits
- Sudden unexplained change in mental status

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Last seen normal < 24 hours ago? — NO → Signs & symptoms of acute stroke include:
- Focal neurologic deficits
- Sudden unexplained change in mental status

↓ YES

Symptoms completely resolved? — YES → Manage off pathway as **transient ischemic attack (TIA)**: Guidelines:
- Admit to Med Surg Status
- Make NPO
- Telemetry
- Neuro checks Q2 hrs X3 hrs, then Q4 hrs X 24 hrs
- MRI Brain w/o contrast (order **"MR Stroke Brain wo"** STAT), include "TIA" on the order indication
- MRI screening questionnaire must be completed in EPIC before patient can be scanned
- Consult neurologist on call
- Order: EKG, CBC, CMP,PTT, PT, ESR
- May need MRA head and neck plus ECHO with bubble study depending on neurology recommendations
- Keep normotensive and normo-thermic
- If no bleed give ASA 5mg/kg (max 81mg)
- Monitor for 24 hours

↓ NO

- Assess for acute stroke risk factors
- Call operator (dial zero) & instruct to activate the "stroke team" (page includes MRI, pharmacy & on-call neurologist); provide patient name, MRN, room number, & extension # of RN caring for patient
- Provider (ED or PICU) Conduct Ped-NIHSS (it is acceptable to complete stroke scale after MRI if imaging is immediately available)

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STAT Testing
- MRI Brain w/o contrast (providers **must** order **"MR Stroke Brain wo"** in Epic for rapid MRI imaging)*
  - MRI screening questionnaire must be completed in EPIC before patient can be scanned
  - IV access not needed prior to MR
- Labs:
  - PT, PTT, INR, ESR, CRP
  - EPOC® panel which includes (blood gases, Hct, Hgb, NA, K, Ionized Ca, Cl, Glu, Lactate, Creat)
- 12-lead ECG

** MRI is priority, do not delay imaging for lab or ECG testing.*

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Additional Instructions
- Establish intravascular access (if not already in place)
  - Patients that can't be D/C from IV infusions may need extension tubing added prior to imaging
- Head of bed flat
- Keep blood pressure within normal limits for age
  - Keep child normo-thermic and normoglycemic
- Vital signs & neuro checks every 15 minutes for 3 hours
- Keep child NPO
- Ensure nursing documentation of weight in Kg and provider documentation of time patient was last seen normal (if not already documented)
- Normal saline (don't give dextrose) if considering fluids
- Review tissue plasminogen activator (tPA) contraindications & eligibility for endovascular therapy while waiting for imaging results

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Radiologist reads scan and calls report to ordering provider and documents in EMR

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Intracranial hemorrhage? — YES →
- Manage as Hemorrhagic Stroke
- Consider neurosurgical consult

↓ NO

Ischemic stroke? — YES →
- Mange as Ischemic Stroke
- tPA treatment protocol (if eligible)
- Aspirin 5 mg/kg (max 81 mg) every 24 hours
  - Start aspirin 24-48 hours after stroke onset if tPA is given
  - Start aspirin immediately if tPA is not given

↓ NO

Manage off pathway

→ **Admit to PICU**

Inclusion Criteria
- Children ≥ 1 month (corrected age)

Exclusion Criteria
- Children < 1 month of age

Updated 01/2020