Acute Stroke Care Guideline – Recognition and Evaluation

Inclusion Criteria: child of any age in any location with suspected acute stroke with or without imaging confirmation

Immediate Assessment:
- Assess for stable airway, adequate ventilation/oxygenation, and intact circulation
- Cardiorespiratory monitoring, oximetry
- Pediatric NIH Stroke Scale (PedNIHSS) assessment by physician before CT scan.
- Vital signs q. 1 hr and neuro checks q. 15 min.

Emergency Department: Immediately Call "Code Stroke" to activate Stroke Team (internal to ED)

- **Neurology on-call Pager**
- **Hematology on-call Pager**
- **Radiology – CT Tech /ASCOM phone/pager**
- **PICU Attending via PICU Charge RN ASCOM Phone**
- **ED Charge RN via ASCOM**
- **Nursing Supervisor via pager/iphone**

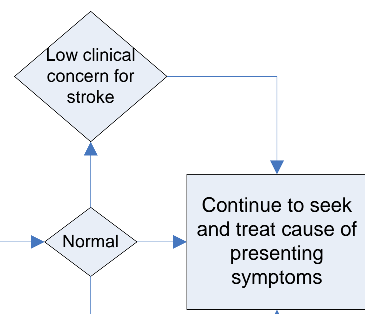
Medical Surgical, NSI, Oncology: Call RRT

PICU Team notify Neurology and Hematology on-call

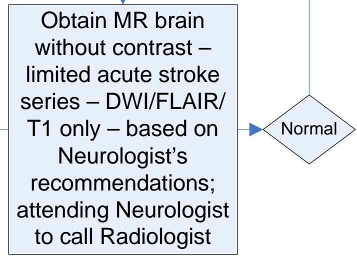
Interventions:
- Accucheck – treat if BG < 60
- O2 to maintain SaO2 > 95%
- NPO
- IV normal saline maintenance rate
- Accept mild hypertension (ischemic stroke only)
- Keep normothermic
- Anticonvulsant loading for acute seizure
- 12 lead EKG

Lab Studies - Stat
- CBC, BMP, type and hold
- DIC panel
- Urine toxicology
- Urine HCG

Imaging
- CT Head without contrast (obtain and interpret within 30-45 mins of arrival)

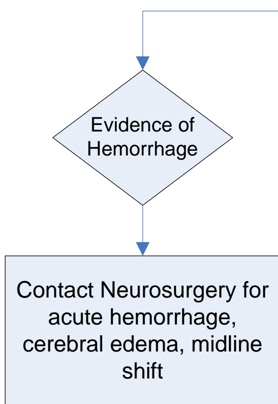


Continue to seek and treat cause of presenting symptoms

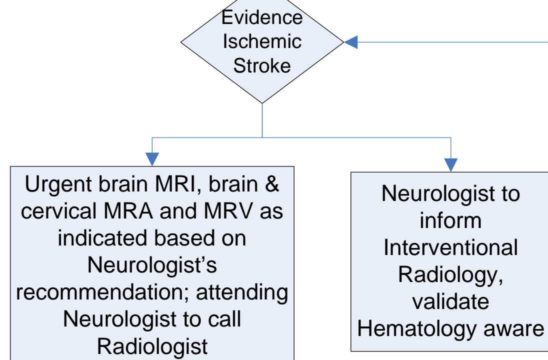


Obtain MR brain without contrast – limited acute stroke series – DWI/FLAIR/ T1 only – based on Neurologist's recommendations; attending Neurologist to call Radiologist

Normal



Contact Neurosurgery for acute hemorrhage, cerebral edema, midline shift



Urgent brain MRI, brain & cervical MRA and MRV as indicated based on Neurologist's recommendation; attending Neurologist to call Radiologist

Neurologist to inform Interventional Radiology, validate Hematology aware

Disposition
- Admit/transfer to PICU when stabilized
- Await further recommendations from Neurology and Hematology
- Patients who present at outside ED should transfer to CHOC ED
- Transfers from other hospital acute units w/ hx stroke/stroke symptoms (up to 1 week) should be admitted to PICU for at least 24 hrs

Supplemental Investigation
- Echocardiography
- EEG

See page 2 for additional information & recommendations

Approved Care Guidelines Committee 5-21-08
Revised Evidence Based Medicine Committee 11-20-13; 9-21-16

Reassess the appropriateness of Care Guidelines as condition changes and 24 hrs after admission. This guideline is a tool to aid in clinical decision making. It is not a standard of care. The physician should deviate from the guideline when clinical judgment so indicates.

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Acute Stroke Care Guideline

Stroke Symptoms in Children

- Numbness, tingling or weakness of the face, arm, or leg, especially on one side of the body
- Acute difficulty in speaking and/or swallowing
- Acute difficulty walking
- Visual changes in one or both eyes
- Complaints of dizziness, loss of balance, or coordination
- Sudden severe headache of unknown cause
- Sudden confusion and trouble understanding

Findings on Exam

- Hemiparesis of new onset
- Facial "droop" on one side
- One sided neglect (ignoring weaker side)
- Aphasia-difficulty with speech or language
- Decreased field of vision on one side
- Cognitive change involving memory, judgment, problem solving

Statistics

- Stroke syndromes affect 6-13/1 00,000 children per year, an incidence which is comparable to childhood brain tumors.
- Stroke is one of the top 10 causes of death among children in the United States.
- The mean interval to diagnosis is 24 hrs after symptom onset in children with ischemic stroke, longer for venous thrombosis.

Imaging

- CT is specific and sensitive for hemorrhagic lesions and may provide clues to other diagnoses. It is insensitive and nonspecific for ischemic injury and for many stroke look-alikes such as tumors or de-myelinating disease.

- Brain MRI is usually required, including diffusion-weighted sequences. In case of a suspicion of stroke, a brain and cervical MRA should also be obtained.

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