

## CLINICAL ALGORITHM FOR INITIAL MANAGEMENT OF SICKLE CELL PATIENTS WITH STROKE

This pathway should be used for patients with SS, SC, or S $\beta$ -thalassemia type sickle cell disease with clinical concern for stroke. Please direct questions to Maine Children's Cancer Program (207-396-7565)

### Management of Stroke in Pediatric Sickle Cell Patients

Strokes are a significant cause of morbidity and mortality in patients with sickle cell disease. Signs and symptoms of stroke include severe headache, vision changes, altered mental status, seizure, aphasia, dysarthria, weakness, numbness and ataxia. If stroke is suspected, immediate evaluation with history, physical and the following diagnostic workup should be completed.

#### Immediate consult to pediatric neurology and pediatric hematology

##### STAT lab evaluation:

- CBC with differential
- Reticulocyte count
- Comprehensive metabolic panel
- Type and Screen
- PT/PTT

\*If febrile please refer to **Fever in Pediatric Sickle Cell Patient Clinical Algorithm**

##### Emergent Imaging: Please discuss with on-call neurologist

- **MRI brain/MRA head and neck** is typically the preferred first-line scan in pediatric patients, though may require sedation (neurology to call anesthesia floor walker at 662-4351)
- **Head CT/CTA** only if concern for ICH/SAH
- Add **gadolinium/venous thrombosis protocol** for suspected Central Venous Sinus Thrombosis (CVT)

#### Intracranial hemorrhage (ICH) or subarachnoid hemorrhage (SAH)

Consult neurosurgery

#### Acute Management

- Supplemental oxygen to keep O<sub>2</sub> sat  $\geq$  95%
- IV fluids to achieve a euvoletic state (careful to avoid hypervolemia)
- Permissive hypertension (allow SBP up to 95%)
- NPO
- Seizure management, consider cEEG
- Antipyretics for fever, maintain euthermia
- Maintain euglycemia

#### Cerebral Venous Sinus Thrombosis (CVST)

Management per hematology

#### Ischemic Stroke

- Admit to Pediatrics/PICU
- Consider exchange transfusion with goal to reduce HbS fraction to <30%

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Algorithms are not intended to replace provider's clinical judgment or to establish a single protocol. Some clinical problems may not be adequately addressed in this guideline. As always, clinicians are urged to document management strategies.