Sickle Cell Disease Acute Evaluation and Management - Pediatric - Emergency Department Algorithm

INTERVENE IMMEDIATELY- PATIENT MAY BE CRITICALLY ILL

Patient Population:
Age > 2 months and ≤ 18 years
HbSS, SC, $S\beta^0$-thalassemia
Fever ≥ 38.5°C in the past 48 hours

Patient Presentation

- Perform cardiorespiratory monitoring, pulse oximetry, and pain screen/assessment
- Administer oxygen if O_2 saturation < 95%
- Initial labs: CBC with differential, reticulocyte count, blood culture
- Consider immediate chest x-ray if tachypneic, chest pain, shortness of breath and/or rales
- Consider additional labs such as: total bilirubin, creatinine, urinalysis and urine culture. If in pain, consider Type and Screen, potassium, sodium, bicarbonate, and chloride and refer to Evaluation and Initial Management of Children with Sickle Cell Disease and Pain Suspected to be a Vaso-Occlusive Event – Pediatric – Emergency Dept. Algorithm
- Check immunization status
- Start maintenance fluids (bolus if clinically dehydrated)

***Historical Red Flags**

- History of Acute Chest Syndrome
- History of stroke
- History of splenic sequestration
- History of sepsis or bacteremia
- Reactive airway disease
- Requires chronic transfusions
- History of PICU admission for SCD related complications

Is the pt ill appearing or any historical red flags*?

- Yes → Acute chest syndrome?**
  - No → Administer IV ceftriaxone → Consult with PEDS HEM/ONC or PICU for admission. Perform further evaluation and management as clinically appropriate (e.g., fluid resuscitation, vancomycin, etc.) → ADMIT TO PICU or PEDS HEM/ONC
  - Yes → Administer IV ceftriaxone + oral azithromycin → ADMIT TO PICU or PEDS HEM/ONC (based on supplemental O_2 need)
- No → Administer IV ceftriaxone → Age ≥ 18 months?
  - No → ADMIT TO PEDS HEM/ONC
  - Yes → Low risk?***
    - No → ADMIT TO PEDS HEM/ONC
    - Yes → Observe for 1 hour post antibiotics → Contact PEDS HEM/ONC to discuss discharge, follow-up, and additional antibiotic therapy

Antibiotics	Dose
Ceftriaxone IV	50 mg/kg/dose (max 2 g)
Azithromycin PO	10 mg/kg (max 500 mg/dose)

****Acute Chest Syndrome:**
New infiltrate on chest x-ray **AND** one or more of the following **NEW** symptoms:

- Fever
- Cough
- Sputum production
- Dyspnea
- Hypoxia

Fluids in Acute Chest Syndrome:
Avoid excessive fluid administration, resuscitate as necessary

*****Low Risk Features:**

- Normal vital signs
- Tolerating PO
- Hgb > 6 mg/dL
- Reticulocyte count > 5% (unless Hgb > 10 mg/dL)
- No significant drop in Hgb from baseline
- WBC 5,000-30,000/mm^3
- No history of bacteremia or sepsis
- No splenic sequestration within the past 3 months
- Not multiple visits for same febrile illness
- Compliant with penicillin
- Fully immunized
- Able to follow-up next day with Peds Hem/Onc via appointment or telephone contact

Contact CCKM for revisions.
Reference the UW Health Acute Evaluation and Management of Children with Sickle Cell Disease – Pediatric – ED Guideline