1.0 Introduction

By 3–4 months of age (when fetal hemoglobin declines to <50% of total), many children with sickle cell anemia (HbSS) and sickle ß-thalassemia develop clinically significant hemolytic anemia and impairment of splenic function. In others, although the HbF may remain above 50% these children are still at risk of splenic hypo function. Even though the spleen may be enlarged during the first years of life, its phagocytic function is markedly reduced. Therefore, children with sickle cell anemia are at risk of overwhelming septicemia, often without a primary focus, due to encapsulated organisms, including Streptococcus pneumonia and Haemophilus influenza type B.

This clinical practice guideline has been developed for the management of febrile patients with sickle cell disease who present to the emergency department or are inpatients.

2.0 Preventative Management

• To reduce high mortality, we strongly recommend:
  
  • Early diagnosis of sickle cell anemia by newborn screening and referral to a comprehensive care program for sickle cell disease. With newborn screening in place since November 2006, patients should be seen within 3 months of birth.
  
  • Prophylactic penicillin or amoxicillin, to be prescribed as soon as sickle cell disease is diagnosed, and continued until at least 5 years of age (to be continued past the age of 5 years in certain circumstances). In patients with significant beta-lactam allergy, trimethoprim-sulfamethoxazole should be used.
  
  • Vaccination against pneumococcus, meningococcus and haemophilus influenza type B. Annual influenza vaccine is also recommended.

• Despite these measures, septicemia may still occur. Whenever a child with sickle cell disease has an oral or rectal temperature >38.5°C or an axillary temperature >38°C, he or she should be seen urgently. Febrile young infants (<3 months of age) should have an appropriate infectious work up, irrespective of their sickle cell status.
3.0 Clinical Recommendations for Management of Fever in Patients with Sickle Cell Disease

**Emergency Department Initial Assessment and Management:**

- Child with Sickle Cell Disease (SCD) presents to ED with oral or rectal temperature > 38.5ºC or axillary temperature (≥ 37.5ºC).

**Emergency Department Monitoring:**

- History to include:
  - Fever
  - Baseline pulse oximetry reading
  - Duration of fever
  - Complications of SCD
  - Previous episodes of fever
- Perform investigations:
  - Routine lab investigations Additional investigations
    - CBC, differential, reticulocyte count, electrolytes, sodium, potassium, CBC, differential, reticulocyte count, electrolytes
- Determine risk for readmission:
  - High risk: 1. Recent history of documented bacterimia or otherwise severe infections
  - Medium risk: 1. Recent history of bacteremia
  - Low risk: 1. No history of bacteremia
- Child has stable vital signs if:
  - No history of bacteremia
  - Hemodynamic instability
  - Focal or otherwise severe infection
- Administer antipyretics
  - Tylenol
  - Ibuprofen
- Administer analgesics as needed
- Parenteral antibiotics should be given even if there is an obvious focus of infection if:
  - Sepsis
  - Fever without focus
  - Urinary tract infection (UTI)
  - History of pneumonia
- Refer to Infectious Disease for all patients with the following:
  - Fever of undetermined origin
  - History of pneumonia
- Follow up confirmed
  - If patient is neutropenic
  - If patient has severe neutropenia
- Child discharged home from ED with appropriate follow up
  - Notify hematology fellow on call prior to discharge home from ED
  - Refer to Pediatric Medicine for admission to centre at Brampton Civic Hospital
  - Refer to Pediatric Medicine for inpatient Sickle Cell order set in Epic
  - Consult Pediatric Medicine for admission to centre at Brampton Civic Hospital
  - Consult Pediatric Medicine for discharge planning process
  - Consult Hematology for guidance related to the management of Hydroxyurea

**Inpatient Management:**

- Inpatient management document
  - Child with Sickle Cell Disease (SCD) presents to ED with fever (oral or rectal temperature > 38.5ºC or axillary temperature > 37.5ºC)
  - Child presents with cough, chest pain, hypoxia or clinical suspicion for pneumonia/acute chest syndrome – obtain if child presents with cough, chest pain, hypoxia or clinical suspicion for pneumonia/acute chest syndrome
- Administer antipyretics
  - Tylenol
  - Ibuprofen
- Administer analgesics as needed
- Parenteral antibiotics should be given even if there is an obvious focus of infection if:
  - Sepsis
  - Fever without focus
  - Urinary tract infection (UTI)
  - History of pneumonia
- Refer to Infectious Disease for all patients with the following:
  - Fever of undetermined origin
  - History of pneumonia
- Follow up confirmed
  - If patient is neutropenic
  - If patient has severe neutropenia
- Child discharged home from ED with appropriate follow up
  - Notify hematology fellow on call prior to discharge home from ED
  - Refer to Pediatric Medicine for admission to centre at Brampton Civic Hospital
  - Refer to Pediatric Medicine for inpatient Sickle Cell order set in Epic
  - Consult Pediatric Medicine for admission to centre at Brampton Civic Hospital
  - Consult Pediatric Medicine for discharge planning process
  - Consult Hematology for guidance related to the management of Hydroxyurea

### PRINTABLE VERSION

**4.0 References**


### 5.0 Related documents

- [Acute Painful Episodes Vaso-occlusive Crisis: Guidelines for Management in Children with Sickle Cell Disease](#)
- [Acute Chest Syndrome or Pneumonia: Guidelines for Management in Children with Sickle Cell Disease](#)

### Attachments:

- [Fever Care Pathway Final 2021.pdf](#)
- [Revision History.docx](#)
- [SC_Clinic Follow Up Revised 2021_FINAL.pdf](#)
- [SCD fever_criteria for admission 2021 FINAL.pdf](#)
- [SCD fever_discharge planning process 2021 FINAL.pdf](#)
- [SCD fever_inpatient management.pdf](#)
- [SCD fever_out patient follow up.pdf](#)
- [SCD pain plan_july 2015.pdf](#)