Management of Febrile Sickle Cell Patients

**Proposal:**

1. All well-appearing febrile (temperature of ≥ 101.5°F PO/rectal or 100.5°F AX) sickle cell patients will have an evaluation done which includes: CBC with diff, reticulocyte count, aerobic blood culture, and urine culture (if appropriate)
   1. CXR for those patients with cough, chest pain, or physical findings suggestive of pneumonia, when breath sounds cannot be auscultated throughout lungs, or less than 3 years of age
2. Following lab studies, patients will receive one dose of Ceftriaxone (75mg/kg) IV x1 as an outpatient (should attempt to be completed within 60 minutes of triage)
3. Criteria for discharge after one dose of antibiotics with phone follow-up next day: (If not meeting below criteria or criteria for admission, must f/u in clinic for second dose of antibiotics)
   1. **Clinical 🡪**
      1. Well-appearing and tolerating PO
      2. No concerns for splenic sequestration, acute chest syndrome, or vaso occlusive crisis requiring admission
      3. No focal bone pain concerning for osteomyelitis
      4. Stable on room air
      5. > 12 months of age
      6. Temperature < 40°C
      7. No allergy to ceftriaxone
   2. **Labs/X-Ray 🡪**
      1. HgB > 5 g/dL and not less than 2g/dL below baseline
      2. WBC < 30 K/uL and >5 K/uL
      3. Reticulocyte count > 1%
      4. CXR (if obtained) without lobar infiltrate
   3. **Past Medical/Social History Negative for 🡪**
      1. Bacteremia/Sepsis
      2. Missing, delayed immunizations (both Prevnar and Pneumovax)
      3. Non-adherence with penicillin prophylaxis
      4. Possibility of non-adherence with follow-up
         1. No phone
         2. Multiple missed appointments or no visit > 1 year in outpatient clinic

\*\*If no phone and no transportation, patient should be admitted for rule out bacteremia

\*\*A working phone number should be obtained directly from the family and transmitted to the Hematology/Oncology Fellow prior to discharge. The morning sick NP for the following day will be responsible for checking blood cultures to ensure that they’re negative, calling the family, and providing appropriate education. If the next day is a weekend or holiday, the short call Fellow will be responsible.

\*\*If after 3 attempts to reach the family and during a weekday, contact appropriate Social Worker for assistance. If still unable to contact family, Social Worker will call non-emergency police line based on county of patient residence.

**Literature:**

1. **NHLBI Guidelines (2014)**
   1. In children with SCD and a temperature ≥101.3 °F (38.5 °C), promptly administer ongoing empiric parenteral antibiotics that provide coverage against *Streptococcus pneumoniae* and gram-negative enteric organisms. Subsequent outpatient management using an oral antibiotic is feasible in people who do not appear ill.
   2. Hospitalize people with SCD and a temperature ≥103.1 °F (39.5 °C) and who appear ill for close observation and intravenous antibiotic therapy.
   3. In people with SCD whose febrile illness is accompanied by shortness of breath, tachypnea, cough, and/or rales, manage according to the preceding recommendations and obtain an immediate chest x ray to investigate for ACS.
2. **Baskin, et. al., (2013)**
   1. Retrospective chart review revealed rate of bacteremia among febrile children with SCD is much lower that previous estimates, and there was no associated morbidity or mortality among the patients managed as outpatients.
   2. Recommendation🡪
      1. A well-appearing febrile child with SCD may be managed as an outpatient after a blood culture has been obtained, parenteral antibiotics were administered, and if there are no reasons for admission, as well as the patient is able to return promptly if condition worsens or blood culture positive.
3. **Bansil et al., (2013)**
   1. Retrospective chart review of 188 patients presenting with hemoglobinopathies to a pediatric emergency department showed a low incidence of bacteremia (1.1 %) with no Streptococcus pneumonia isolates
   2. Recommendations 🡪
      1. Outpatient empiric antibiotics for children not suspected to have bacteremia is appropriate for children with SCD and fever
4. **Rogovik, et al., (2010)**
   1. Retrospective chart review of 692 patients in pediatric ED with SCD and fever showed no growth of Streptococcus pneumonia species
5. **Savlov, et al., (2014)**
   1. Case-control study over 17 year period with SCD and fever at presentation looked at 40 cases of patients with SCD who had fever and a positive blood culture. Patients with bacteremia were more likely to have an ANC > 20 x 10^9/L, proportion of band cells, fever > 39.5, and emesis at presentation. In the patients with ANCs lower than the above number and bacteremia, these patients presented with ≥ 1 of lethargy, irritability, and hypotension.
   2. Cannot be used as a screening tool, although in combination with a thorough history and physical exam, this data can assist in ruling out possibility of bacteremia.
   3. Recommendations 🡪
      1. Patients who meet “low risk criteria” can be safely managed as outpatients
6. **Shihabuddin & Scarfi, (2014)**
   1. Retrospective chart review over 10 years with SCD who presented with fever and had a blood culture performed. Results showed the incidence of bacteremia in febrile SCD patients is low.
   2. Overuse of antibiotics can result in bacterial resistance.
   3. All patients with positive blood cultures had been discharged home from the ED and followed up by phone call or in a clinical setting and those with repeat blood cultures all resulted negative.
   4. Recommendations 🡪
      1. Close follow-up within 24 hours and delayed administration of antibiotics may be considered as an alternative treatment option.