**The Diagnosis and Management of Acute Bacterial Sinusitis in Children Aged 1 to 18 Years:**

Summary of the 2013 AAP Clinical Practice Guideline

# 1. Background

Acute bacterial sinusitis is diagnosed by a patient who has an acute URI with any of the following:

* persistent illness (nasal discharge or daytime cough or both lasting >10 days without improvement)
* a worsening course (“double sickening”)
* severe onset (concurrent fever >39C or purulent nasal discharge for at least 3 consecutive days).

Uncomplicated URI typically lasts 5-7 days with fever (when present) usually occurring early in the illness. Resolving symptoms and signs may persist in some patients up to 10 days.

Important to identify cases of sequential episodes of uncomplicated viral URI.

Allergic and nonallergic rhinitis can predispose a patient to acute bacterial sinusitis.

# 2. Diagnostics

* Diagnosis should be made using clinical criteria above.
* Do NOT obtain imaging studies for diagnosing.
  + Studies have found that imaging in children with uncomplicated URI will show significantly abnormal paranasal sinuses, similar to findings associated with bacterial sinusitis. An abnormal image does not confirm the diagnosis.
* Obtain CT with contrast of paranasal sinuses and/or MRI if suspect orbital or CNS complications.
  + Orbital complications: Suspect with eye swelling, proptosis, impaired function of extraocular muscles
  + Intracranial complications: Suspect with severe headache, photophobia, seizures, focal neuro findings
  + Consider MRI with contrast if intracranial complication are likely in an older child

# 3. Management Guidelines

*(apply to children age 1-18 yo without anatomic abnormalities, immunodeficiency, or CF)*

* New guidelines allow for additional observation option.
* For “persistent illness”, can either prescribe antibiotic therapy OR offer additional observation for 3 days. If no improvement after 3 days, or if there is clinical worsening, start antibiotics.
  + Shared decision making with the family considering symptom severity, quality of life, etc.
  + If child received antibiotics in the past 4 weeks, have a concurrent bacterial infection, have underlying conditions, or have suspected complications 🡪 treat with antibiotics!
* For severe onset or worsening course, treat with antibiotics
* Two RCTs have found an increase in cure or improvement after antibiotics compared with placebo with NNT of 3-5.

# 4. Antibiotic Selection, Treatment

* Major bacterial pathogens include *Streptococcus pneumoniae, Haemophilus influenza, Moraxella catarrhalis*
  + Orbital or intracranial complication? Think *S. aureus*!
* First line treatment: **Amoxicillin with or without clavulanate**
  + Standard dose: **45 mg/kg/day div BID**
  + High prevalence of resistant *S. pneumo,* moderate-severe disease, attends day care, or recently treated with antibiotics: **80-90 mg/kg/day div BID**
* For children who cannot tolerate oral antibiotics 🡪 **ceftriaxone 50 mg/kg x1, start oral antibiotic 24 hours later**
* Allergic to amoxicillin?
  + **Cefdinir 14 mg/kg/day div Q12-24 hr for 6 mo-12 yo, 600 mg/day div Q12-24 hr for 13 yo and older**
  + **Cefuroxime 30 mg/kg/day div BID for 3 mo-12 yo, 250 mg BID for 13 yo and older**
  + **Cefpodoxime 10 mg/kg/day div BID for 2 mo-12yo, 400 mg/day div BID for 13 yo and older**
* Duration: Minimum course of 10 days; continue antibiotic therapy for 7 days after resolution of symptoms
* If worsening symptoms or failure to improve within 72 hours 🡪
  + Reassess and confirm correct diagnosis
  + Change antibiotic (see below table) OR initiate antibiotic treatment of the patient who was initially managed with observation

