Pediatric Acute Bacterial Sinusitis (ABS) Guideline

EVALUATION AND TREATMENT

Pediatric Patient Presents with Signs/Symptoms of Acute Rhinorrhea

Exclusion Criteria

- Under 1 year of age
- Chronic sinusitis
- Ciliary dyskinesia
- Immune deficiencies
- Cystic fibrosis and other chronic lung conditions
- Identified periorbital, orbital, or intracranial abscess

High Risk Patient Exclusion

Do not use this guideline.

Individualize patient evaluation for excluded groups.

Concerning Complications

Patients with symptoms concerning for complications:

- Periorbital cellulitis
- Subperiosteal abscess
- Intracranial abscess

High Risk Patient Exclusion

Do not use this guideline if complications for ABS are suspected.

Consider consult with ENT or Ophthalmology and/or Imaging.

Assess Pediatric Patient for Acute Bacterial Sinusitis (ABS)

- Up to 4 weeks of purulent nasal drainage accompanied by nasal obstruction, facial pain-pressure-fullness, or both
- **Radiologic studies (plain films, CT, MRI, or ultrasound) to confirm routine ABS are not recommended or indicated**

Upper Respiratory Symptoms Less Severe

Observe without antibiotics.

Treat as Upper Respiratory Tract Infection (URI) with symptomatic treatment:

- Acetaminophen or ibuprofen
- Nasal steroids if allergic component
- Over the counter (OTC) nasal saline spray

Upper Respiratory Symptoms Persistent

Evaluate patient for either symptom/sign:

- Persistent symptoms lasting > 10-14 days consisting of nasal discharge or persistent cough **without evidence of improvement**
- **Option** for antibiotic therapy **OR** additional observation for 3 days
- Reassess if worsening or failure to improve within 72 hours

Upper Respiratory Symptoms More Severe or Worsening

Evaluate patient for either symptom/sign:

- Worsening symptoms after 6 days of symptoms consisting of new-onset fever ≥ 100.4 ^{0}F/38 ^{0}C or increased nasal discharge or cough after initial improvement
- Ill appearing child with symptoms lasting for > 3 consecutive days consisting of documented fever of ≥ 102 ^{0}F/38.9 ^{0}C **AND** purulent nasal discharge

Antibiotic Treatment IS NOT Indicated

Antibiotic Treatment IS Indicated for Pediatric Patients Diagnosed With ABS

- First line antibiotic therapy is Amoxicillin 80-90 mg/kg/day PO divided two times a day for 10-14 days. Max daily dose is 750 mg to 1.5 grams/day.

- Second line therapy is Amoxillicin-clavulanate (Augmentin) and dosing is dependent upon concentration:
  At 400 mg/5 ml, give 40-45 mg/kg/day divided two times a day for 10-14 days. Max daily dose for children and adolescent >40 kg and adult dose: 500 mg every 8 hours using the 500 mg tablet **only *OR*** 875 mg every 12 hours using the 875 mg tablet.
  At 600 mg/5 ml, give 80-90 mg/kg/day divided two times a day for 10-14 days. Per the manufacturer, the 600 mg/5 mL formulation should only be used for patients weighing <40 kg (max 3.6 grams/day). Children and adolescents ≥40 kg and adult dose: 2000 mg (two 1000 mg extended release tablets) every 12 hours.

- Third line antibiotics include the following for 10-14 day therapy:
  Cefdinir (Omnicef) 14 mg/kg/day PO taken once daily or the dose can be divided two times a day. Max daily dose is 600 mg/day. ***OR***
  Cefprozil (Cefzil) 30 mg/kg/day divided two times a day. Max dose is daily adult dose 0.5-1 gram/day. ***OR***
  Clindamycin (Cleocin) 40 mg/kg/day divided three times a day (penicillin allergy). Max dose is daily adult dose 1.8 grams/day.

- Ceftriaxone (Rocephin) 50 mg/kg/single IM dose to initiate therapy in patients unable to initially take PO therapy. Max dose is daily adult dose 1 gram.

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REFERENCE INFORMATION

Clinical Pearls

- **Only 6.5% of URIs go on to develop ABS.**
- Radiologic studies (plain films, CT, MRI, or ultrasound) to confirm ABS are not recommended or indicated.
- High risk groups are excluded from the algorithm (see exclusion criteria).
- Be alert to complications of ABS, such as periobital cellulitis and subperiosteal abscess, and the clinical signs and symptoms most likely to occur with these diagnoses (periorbital swelling, chemosis, visual impairment, ophthalmoplegia, facial pain, etc).
- If diagnosis is unsure and the patient looks well, follow up with the patient's PCP or ENT is appropriate rather than prescribing an antibiotic without a definite diagnosis.
- Nasal purulence alone is not a reliable indicator for the diagnosis of ABS vs. URI.
- Patients with persistent symptoms have the option for antibiotic therapy or additional observation for 3 days. This is an opportunity for shared decision-making with the child's family. If observation is offered, a mechanism must be in place to ensure follow-up and begin antibiotics if the child worsens at any time or fails to improve within 3 days of observation.
- Azithromycin is not recommended; Clindamycin or Cefdinir is recommended if patient has a penicillin allergy
- **High dose** recommended for patients with any of the following:

Moderate to severe infection, age <2 years, childcare attendance, or recent antibiotic treatment (per AAP, Wald, 2013).
OR
Areas with high endemic rates of penicillin-nonsusceptible *S. pneumoniae*, patients with severe infections, daycare attendance, age <2 years, recent hospitalization, antibiotic use within the past month, or patients who are immunocompromised (per IDSA, Chow, 2012).

References

1. Shapiro, D., Gonzales, R., Cabana, M., Hersh, A. (2011, January). National trends in visit rates and antibiotic prescribing for children with acute sinusitis. *Pediatrics*, 127(1).
2. Wald, E., Applegate, K., Bordley, C., Darrow, D., et al (2013, July 1). Clinical practice guidelines for the diagnosis and management of acute bacterial sinusitis in children aged 1 to 18 years. *Pediatrics*, 132(1):e262-e280.
3. Wald, E., Nash, D., Eickhoff, J. (2009, July). Effectiveness of amoxicillin/clavulanate potassium in the treatment of acute bacterial sinusitis in children. *Pediatrics*, 124(1).