Diagnosis & Management of Pediatric Sinusitis: A Survey of Primary Care, Otolaryngology & Urgent Care Providers

Amanda Kotowski, DNP, CPNP
Laurie Newton, DNP, CPNP
Melissa Grinker, MSN, RN
Robert Chun, MD

Background

• Estimated prevalence of 20 million cases of acute rhinosinusitis (ARS) occurring annually in the United States
• Between 6-7% of children seeking care for respiratory symptoms has an illness consistent with acute bacterial sinusitis

AAP (2013) Guidelines

• Diagnosis
  • Persistent illness, ie, nasal discharge (of any quality) or daytime cough or both lasting more than 10 days without improvement OR
  • Worsening cough, ie, worsening or new onset of nasal discharge, daytime cough or fever after initial improvement OR
  • Severe onset, ie, concurrent fever (temperature ≥102.2°F) and purulent nasal discharge for at least 3 consecutive days

Disclosure Information for:
Amanda Kotowski and Laurie Newton.

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AAP (2013) Guidelines

• **Treatment**
  - Amoxicillin with or without clavulanate as first-line treatment
    - 80 to 90 mg/kg per day with risk factors
  - Antibiotic treatment for 7 days after symptom resolution
  - 72 hours as the time to assess treatment failure
  - No recommendations on:
    - Intranasal steroids
    - Saline irrigation
    - Nasal decongestants, mucolytics and antihistamines

(Wald et al., 2013)

Purpose

1. To assess pediatric PCP, pediatric otolaryngology (ENT) and pediatric urgent care (UC) providers’ perception of their adherence to the 2013 AAP guidelines for the diagnosis and management of ARS in children 1 to 18 years old.

2. To compare and contrast the diagnosis and management of ARS across the specialties of pediatric primary care, pediatric ENT and pediatric UC.

Framework

- Quality Improvement Project
  - Utilizes established benchmarks and indicators to evaluate and improve practice
- Avedis Donabedian’s Structure-Process-Outcomes Model
- No IRB approval required

(Donabedian, 2005; Raines, 2012)

Provider Survey

- A 21-item questionnaire (CVI .9) was designed by the investigators using Survey Monkey®
- Survey was emailed to a total of 138 providers in Southeastern Wisconsin (94 PCP, 25 UC and 19 ENT) from:
  - 20 pediatric primary care clinics
  - 1 pediatric urgent care (UC) practice
  - 1 pediatric otolaryngology (ENT) specialty practice
- 50.1% response rate (70 providers)
  - Anonymous survey

Sample of Survey Questions

- **Diagnosis**
  - Diagnostic criteria utilized
  - Utilization of nasal culture
  - Utilization of CT scan

- **Management**
  - Typically utilized antibiotics
  - First line antibiotic treatment choice for children with penicillin allergy; for child in daycare
  - Length of antibiotic therapy
  - Approach to treatment failure
  - Adjuvant therapies routinely used

Results - Diagnosis

Sinusitis Diagnosis

<table>
<thead>
<tr>
<th>Persistent symptoms &gt;10 days</th>
<th>Worsening of viral URI symptoms at days 3-7</th>
<th>Severe onset &amp; Halitosis with purulent nasal discharge for 3 days</th>
<th>Nasal congestion of any length of time</th>
</tr>
</thead>
<tbody>
<tr>
<td>15%</td>
<td>70%</td>
<td>45%</td>
<td>6%</td>
</tr>
</tbody>
</table>
Results - Diagnosis

- ENT (78.6%), PCP (19.4%) and UC (5%) will culture their patients.
- ENT providers (57%) are comfortable with a nasal culture being obtained by PCPs.
- PCP (41.5%) and UC (30%) think a patient should be seen by ENT for a nasal culture.

Results - Diagnosis

Nasal Culture Indication

- Persistent symptoms on antibiotic before changing agents
- Pt tx with several antibiotics and still symptomatic
- Pt with sx of chronic sinusitis

Results - Management

Sinusitis Management: Antibiotic Choice

- For PCN allergic patients, most providers use cefdinir (88%) and azithromycin (7%).
- Typical length of antibiotic therapy prescribed by all providers is 10 days (70%) and 14 days (14%).
- ENT (21%) prescribes 7 days past any symptom compared to PCP (8%) and UC (5%).

Results - Management

Sinusitis Management: Adjuvant Therapies

- Do not routinely order sinus CT
- Order a sinus xray before a sinus CT
- Prior to ENT referral
- To confirm sinusitis diagnosis
- Worried about complication of sinusitis

Results - Diagnosis

Sinusitis Management: Imaging
Conclusions

- Providers’ diagnostic criteria for ARS is consistent amongst the 3 specialties and in accordance with the 2013 AAP guidelines.
- Variation exists in clinical management between the 3 specialties
  - Variation in length of antibiotic treatment
  - Variation in adjuvant therapy use
- Imaging is not routinely ordered by PCP/UC.

Conclusions

- The majority of ENT providers obtain nasal cultures for patients with chronic or recurrent acute sinusitis
- ENT providers perceive that it is appropriate for PCPs to obtain nasal cultures; however, the majority of PCPs do not obtain cultures
- The perceived indication for obtaining a nasal culture varies between the 3 specialties

Recommendations

- Dissemination of results to all participants
- Educate all providers on the current 2013 AAP guidelines
  - Include RNs who may help with patient education
- Define practice across all settings

Limitations

- Small sample size
- Respondents were from one pediatric system
- Response bias

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Questions
References


References


