Otitis Media with Effusion Panel
Michael McCormick MD
Robert Chun MD
Charles Harkins MD
Thomas Robey MD

Learner Objectives

• After this presentation you should:
  1. Understand the role of medical management in children with OME
  2. Understand which children with OME benefit from adenoidectomy
  3. Be able to counsel parents of infants who fail their newborn hearing screen
  4. Be able to counsel families on the natural history and speech/language impacts of OME
CPG: OME - Purpose

- Identify quality improvement opportunities in managing OME and to create explicit and actionable recommendations to implement these opportunities in clinical practice.

CPG: OME – Specific Goals

1. Improve diagnostic accuracy
2. Identify children who are most susceptible to developmental sequelae from OME
3. Educate clinicians and patients regarding the favorable history of most OME and the lack of clinical benefits for medical therapy.

Key Action Statements
Case 1

- 3yo male referred from pediatrician for concerns about hearing x3-4 months, no speech concerns
- PMH: FT, healthy child; no RAOM
- SH: preschool
- ROS: no snoring or nasal congestion
- PE: Bilateral middle ear effusion
Watchful Waiting

- **Strong Recommendation**
  - Manage child with OME who is NOT at risk with watchful waiting for 3 months from date of onset (if known) of date of diagnosis
- **Goal:** Avoid unnecessary surgery
- **Rationale:**
  - 75–90% of effusions after AOM resolved at 3 mos
  - >50% newly diagnosed OME resolved at 3 mos
  - Little potential harm in observation in child who is not at risk

OME: Who is at risk?

- Clinicians should determine if a child with OME is at increased risk for speech, language, or learning problems

<table>
<thead>
<tr>
<th>Table 3. Risk Factors for Delayed Development in Children with Otitis Media with Effusion*</th>
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<tbody>
<tr>
<td>Recent history of multiple episodes of acute otitis media with effusion</td>
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<tr>
<td>Hearing loss at time of diagnosis</td>
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<tr>
<td>Hearing loss at 3 mos post-diagnosis</td>
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<tr>
<td>Speech delay (talking or word repetition)</td>
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<tr>
<td>Language delay (poor language or limited expression)</td>
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<td>Intellectual delay (low IQ)</td>
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<td>Developmental delay (motor, cognitive)</td>
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Surveillance

- Evaluate child with COME at 3- to 6-month intervals until
  - effusion is no longer present,
  - significant hearing loss is identified, or
  - structural abnormalities of TM or middle ear are suspected
Surveillance

• Risk factors with reduced likelihood of spontaneous resolution
  1. Onset of OME in summer or fall
  2. Hearing loss >30dB in better hearing ear
  3. H/O prior tympanostomy tubes
  4. Not having a prior adenoidectomy

Surveillance

• Management considerations
  – Autoinflation of eustachian tube
    • Low cost, low adverse events
    • Inconvenient, compliance
    – Optimize listening environment

Optimize Learning Environment
Back to Case 1…

- 3yo healthy male
- No history of RAOM
- No speech concerns
- No snoring or sinus problems

Medical Therapy for OME

- Three Strong Recommendations Against:
  1. Steroids – no significant benefit with either systemic or topical nasal steroids
  2. Antibiotics
     - Small benefit in resolution of effusion ONLY, not hearing or levels or need for future surgery
     - Offset by adverse events and bacterial resistance
  3. Antihistamines/decongestants – no benefit, more adverse events
     - Includes montelukast
Medication Therapy for OME

- Steroids and OME
  - OSTRICH: Oral steroids for the resolution of otitis media with effusion in children
  - Randomized controlled trial comparing 7 days of oral steroids vs placebo
  - Primary outcome: hearing at 5 weeks
  - Secondary outcomes: longer term effects
    - Hearing
    - Otoscopic findings
    - Symptoms
    - Grommets
    - Resources

Patient Education

- Provide parents with verbal and written education
  - Natural history of OME
  - Need for follow-up
  - Potential sequelae
Case 2

- 6yo male failed his hearing screen at school
- Parents and teachers have concerns about speech delay
- Only 1 or 2 ear infections in last 6 months
- PMH: FT, healthy
- FH: older sibling had ear tubes when younger
- PE: bilateral middle ear effusions, mouth-breathing
Surgery for OME

- Two Recommendations in OME CPG:
  - Child <4 years old
    - Tympanostomy tubes
    - Adenoidectomy NOT recommended unless distinct indication (nasal obstruction, chronic adenoiditis)
  - Child 4 years or older
    - Tympanostomy tubes
    - Adenoidectomy
    - Both
Tympanostomy Tubes CPG

- OME >3 months AND documented hearing difficulties (Recommendation)
- OME >3 months AND symptoms likely attributable to OME (Option)
- RAOM with effusion at time of assessment (Recommendation)
- OME in at-risk children (Option)

Surgery for OME

- Adenoidectomy
  - No longer recommended as routine for second tympanostomy tubes in children <4
  - Children >4
    - Fewer days with OME over next 12 months
    - Lower failure rates
    - Lower rate of future surgery

Evidence-Based Medicine

- The conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients

Evidence-Based Medicine

• The conscientious, explicit and judicious use of current best evidence in helping individual patients make decisions about their care

Surgery for OME

• Shared Decision Making Model

Case 3

• 5 week old female presents after failing newborn hearing screen
• Unremarkable pregnancy
• Healthy mother
• No history of early hearing loss in family
• PE: cerumen removed, dull poorly-mobile tympanic membranes bilaterally
Tympanometry

- Strong recommendation that clinicians should obtain in a child with suspected OME for whom the diagnosis is uncertain after pneumatic otoscopy (gold standard)
OME and Failed NBHS

- Clinicians should document counseling of parents of infants with OME who fail a NBHS regarding the importance of follow-up to ensure that hearing is normal when OME resolves

OME and Failed NBHS

- OME is important cause of transient hearing loss in newborns
  - Boudewyns et al, 2011 - Up to 55% of failed screenings have OME
    - 23% of these spontaneously resolve
    - Hearing normalized after tympanostomy tube placement in remainder of patients
  - Boone et al, 2005 – up to 11% have remaining SNHL after OME resolved

Summary

- Do
  - Screen for OME in at-risk children
  - Evaluate hearing in children with OME
  - Educate families of children with OME regarding natural history, need for follow-up, and possible sequelae
  - Recommend tympanostomy tubes for children <4yo with OME>3 months AND documented hearing difficulties
  - Counsel families of infants with OME who fail NBHS on importance of follow-up to ensure normal hearing
Summary

• Do NOT:
  – Prescribe medical therapy (antibiotics, nasal steroids, oral steroids, antihistamines, decongestants) for children with OME
  – Routinely recommend adenoidectomy for children <4yo who meet criteria for tympanostomy tube placement for OME

THANK YOU