IMPLEMENTATION OF GUIDELINES FOR TYMPANOSTOMY TUBES IN CHILDREN
TYMPANOSTOMY TUBES IN CHILDREN

- 20% of all ambulatory surgeries.
- Approximately 667,000 children receive tympanostomy tubes each year.
- 1.8 billion in healthcare dollars.
- Children have a higher incidence of otitis media due to poor functioning Eustachian tubes.
  - 40% of children have experience at least three episodes of acute otitis media (AOM) by age 2.
  - At any one time 20% of school-aged children are afflicted by middle ear effusion (MEE).
- One study demonstrated that tympanostomy tubes
  - Reduce incidence of MEE by 32%.
  - Improved average hearing levels by 5-12dB.
AAO-HNS GUIDELINES

- July 2013
- Evidence-based guidelines- indications and care of tympanostomy tubes.
  - Strong Recommendations (1)
  - Recommendations (9)
  - Optional (2)
- Prior to this no clinical guidelines in the US.
- Patients aged 6 months to 12 years.
- Exclusion
  - Retraction-type ear disease.
  - Complications of AOM.
  - Medication administered to middle ear (ie-SNHL).
STUDY

- Fourteen question survey created using Survey Monkey.
  - Demographics.
    - Gender, focus of practice, and years of clinical practice.
    - Strong Recommendation and Recommendation.
- Approved by the Institutional Review Board (IRB)
- May 2014-Survey created and distributed at AOCOO-HNS annual meeting in Scottsdale, AZ
- Thirty-eight of the fifty surveys were collected.
  - Completion rate 78%
- Data analyzed in Excel spreadsheet.
  - No p-values were calculated due to the small sample size.
RESULTS

Characteristics of Osteopathic ENT Physicians Surveyed

- Gender: 81.6% Male, 18.4% Female
- Years of practice: 26.3% 1-5 yrs, 21.1% 6-10 yrs, 15.8% 11-15 yrs, 38.8% 16 yrs or more
- Focus of practice: 89.5% General, 2.6% Otology, 2.6% Rhinology, 5.3% Other
<table>
<thead>
<tr>
<th>Reference Number</th>
<th>Survey Questions</th>
<th>Survey Responses (Response #/38)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>If a child presents with acute uncomplicated tympanostomy tube otorrhea how often do you only prescribe topical antibiotics? (Strong Recommendation)</td>
<td>5.3% 2.8% 23.7% 68.4%</td>
</tr>
<tr>
<td>5</td>
<td>How often do you obtain an age-appropriate hearing test if otitis media with effusion (OME) persists for 3 months of longer?</td>
<td>2.6% 15.8% 15.8% 65.8%</td>
</tr>
<tr>
<td>6</td>
<td>How often do you obtain an age-appropriate hearing test prior to surgery when a child becomes a candidate for tympanostomy tube?</td>
<td>2.6% 23.7% 18.4% 55.3%</td>
</tr>
<tr>
<td>7</td>
<td>How often do you recommend bilateral tympanostomy tube insertion if a child has OME for 3 months of longer and documented hearing difficulties?</td>
<td>0% 0% 47.4% 52.6%</td>
</tr>
<tr>
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<td>Survey Responses (Response #38)</td>
</tr>
<tr>
<td>------------------</td>
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<tr>
<td>8</td>
<td>How often do you reevaluate a child with OME at 3 to 6 months intervals until the effusion has resolved, significant hearing loss is detected or structural abnormalities of tympanic membrane or middle ear is suspected?</td>
<td>Never 0%  Sometines 7.9%  Most of the time 42.1%  Always 50%</td>
</tr>
<tr>
<td>9</td>
<td>How often do you counsel against tympanostomy tube insertion in children with recurrent acute otitis media who do not have middle ear effusion at time of assessment?</td>
<td>5.3%  Sometines 52.6%  Most of the time 26.3%  Always 15.8%</td>
</tr>
<tr>
<td>10</td>
<td>How often do you recommend tympanostomy tube insertion in children with recurrent acute otitis media who have middle ear effusion at the time of assessment?</td>
<td>0%  Sometines 28.9%  Most of the time 44.7%  Always 26.3%</td>
</tr>
<tr>
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<td>Survey Questions</td>
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</tr>
<tr>
<td>------------------</td>
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<td>----------------------------------</td>
</tr>
<tr>
<td>11</td>
<td>How often do you recommend tympanostomy tube insertion in at-risk children with OME that is unlikely to resolve documented by a type B tympanogram or effusion greater than 3 months?</td>
<td>Never</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0%</td>
</tr>
<tr>
<td>12</td>
<td>How often do you counsel caregivers on the duration of tube function, recommended follow up schedule and detection of complications?</td>
<td>0%</td>
</tr>
<tr>
<td>13</td>
<td>How often do you counsel caregivers on prophylactic water precautions for children with tympanostomy tubes?</td>
<td>2.6%</td>
</tr>
</tbody>
</table>
DISCUSSION

• Frequencies were calculated if focus of practice or years practicing has any effect on guidelines.
  • Neither factors played a difference in results.
• Overwhelmingly physicians surveyed are following AAO-HNS typanostomy tube guidelines.
• However, 60.5% of physicians responded that the guidelines have not changed how they practice or manage their patients.
However, according to this study there are two recommendations physicians are not following.

- Advise against tympanostomy tubes in the setting of AOM without evidence of OME.
  - AOM can be difficult to diagnosis. Majority of parents describe nonspecific symptoms such as fever and otalgia.
  - Physical exam can be hampered by crying child or cerumen leading a false sense of erythematous tympanic membrane.
  - Residual middle ear effusion aids in diagnosis or confirmation of AOM and Eustachian tube dysfunction.
  - Predispose a child to further infections.
DISCUSSION

• Against counseling on water precautions.
• Showed little clinical benefit for use of plugs.
• No significant data to show enough pressure is present to allow water into the middle ear space in swimming at the surface.
• Considerable effort by caregivers to limit water exposure.
• Exception is children with persistent tube otorrhea from P. aeruginosa or immune dysfunction.
IN SUMMARY

- Physicians surveyed are following the guidelines.
- Two recommendations that physicians are not following.
  - Recommend against tympanostomy tube insertion in children with recurrent acute otitis media who do not have middle ear effusion at the time of assessment.
  - Recommend against counseling caregivers on prophylactic water precautions for children with tympanostomy tubes.
THANK YOU.

• Any questions?
• Rosenfeld RM, Kay D. Natural history of untreated otitis media. Laryngoscope. 2003; 113(10):1645-1657.