Acute otitis media (AOM) is the most common disease in pediatric otolaryngology practice. AOM is also the most common reason for ambulatory surgery and antibiotic use in American children. Over $1.8 billion USD is spent placing 670,000 tympanostomy tubes in the United States each year; yet until recently, there were no clinical practice guidelines for tube placement. In 2013 the American Academy of Otolaryngology released clinical practice guidelines for tube placement in children aged 6 months to 12 years old. Action statement 6 within those guidelines says: Clinicians should not perform tympanostomy tube insertion in children with recurrent AOM who do not have middle ear effusion (MEE) at the time of assessment.

This recommendation is based on spontaneous improvement of AOM without MEE, and the unclear benefit of tubes in these patients. No study to our knowledge has directly evaluated the efficacy of action statement 6 at reducing the need for tympanostomy tubes. Furthermore, no studies have assessed risk factors that may increase the risk for failure of watchful waiting, defined as tube placement, with regards to action statement 6.

**Study Design and Methods**

Retrospective chart review of hospital and clinical records were analyzed (n = 123 patients). WW was defined in children aged 6 months – 12 years, with no MEE on presentation, and with:

- ≥3 episodes of AOM in 6 months
- or
- ≥4 episodes of AOM in 12 months

A WW failure rate, defined as patients receiving ear tubes (BMT) was then determined. Gender, daycare status, month of presentation and smoking exposure were recorded to calculate the relative risk of WW failure with known risk factors of recurrent AOM. Exclusion criteria: Age > 12 years or < 6 months old; Prior T-tube placement; No audiogram or tympanometry results.

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**Objectives**

- Evaluate the 2013 American Academy of Otolaryngology tympanostomy tube guidelines in our patient population
- Identify potential risk factors that influence success of “watchful waiting” strategy

**Introduction and Background**

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**Results**

**Figure 1. Rates of watchful waiting and watchful waiting (WW) failure in patient cohort (n = 123).** Watchful waiting was a successful treatment modality in 66% of patients. 34% of patients failed WW and required subsequent tympanostomy tube placement.

<table>
<thead>
<tr>
<th>Variable</th>
<th>WW Failure (%)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daycare</td>
<td>1.37 (0.80, 2.37)</td>
<td>0.239</td>
</tr>
<tr>
<td>Smoking</td>
<td>1.04 (0.52, 2.09)</td>
<td>0.915</td>
</tr>
<tr>
<td>Gender</td>
<td>1.28 (0.76, 2.14)</td>
<td>0.315</td>
</tr>
<tr>
<td>Season</td>
<td>1.06 (0.67, 1.67)</td>
<td>0.812</td>
</tr>
</tbody>
</table>

**Conclusions**

- Tympanostomy tube guidelines help correctly identify and prevent unnecessary tube placement in majority of pediatric patients who present with recurrent AOM without middle ear effusion. 66% of these patients had resolution of their symptoms and did not require tympanostomy tubes.
- These results validate this treatment modality and support action statement 6.
- No significant difference in risk of failure of watchful waiting due to smoke exposure and daycare attendance in our cohort.
- Further research needs to be performed to help identify other risk factors which may increase risk of failure for watchful waiting and to analyze cost analysis for patients who failed watchful waiting.

**References**