

# Clinical failure rate of amoxicillin for the treatment of acute otitis media in young children.

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## BACKGROUND:

- Acute otitis media (AOM) is the most common indication for antibiotics in children.
- The primary pathogens that cause AOM have changed since the introduction of the pneumococcus conjugate vaccine.

## OBJECTIVE:

Determine the clinical failure rate and recurrence rate of amoxicillin for treatment of AOM in the post-PCV era.

## METHODS:

- Prospective single arm observational study
- Inclusion- Children 6-35 months at Denver Health, April '19-Mar '20 with uncomplicated AOM, treated with amoxicillin
- NP Swab for otopathogen culture
- Surveys including AOM- SOS© (UPMC, Pittsburgh, PA) day 5, 14, and 30
- Primary outcome: Treatment failure and recurrence determined by need for a new antibiotic
  - Treatment Failure 2-14 day from diagnosis
  - Recurrence 15-30 days from diagnosis
- Secondary outcome: 5 and 14 day treatment failure defined by <55% improvement of AOM-SOS©

# Amoxicillin treatment failure for acute otitis media was rare, including for children with organisms that were not susceptible to amoxicillin.



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## RESULTS:

- 110 Enrolled, 82 Cultured Prior to Antibiotics
- 86% Completed all Surveys

## TREATMENT FAILURE AND RECURRENCE

### Needed a new antibiotic:

- 2-14 Days- **4.5%** (5; 95%CI:2.0-4.5%)
- 15- 30 Days-**5.5%** (6, 95%CI:2.5-5.5%)

### <55% Improvement of AOM-SOS©

- 5 Days- **28.4%** (37; 95%CI:25.5-33.6%)
- 14 Days- **15.5%** (27; 95%CI:17.5-24.5%)
- Only **2** required a new antibiotic

## MICROBIOLOGY

Organism	N (%)
	N=82
Any <i>S.pneumoniae</i> <sup>a</sup>	31 (37.8)
Any <i>H.influenzae</i> <sup>b</sup>	17 (20.6)
Any <i>M.catarrhalis</i>	44 (53.7)
Any <i>S. aureus</i>	6 (7.3)
Single organism	34 (41.5)
Multiple organisms	31 (37.8)
No organisms	17 (20.7)

<sup>a</sup>5 had intermediate penicillin resistance (MIC 0.12-1 µg/mL) and 3 had penicillin resistance (≥2 µg/mL) <sup>b</sup>9 *H.influenzae* isolates produced beta-lactamase.

- 56/82 (68%) had one or more organisms that were not susceptible to amoxicillin
- Combined Failure Resulting in Need for a New Antibiotic of Those Not Expected to Resolve with Amoxicillin**  
Failure: 3.6% (2/56)  
Recurrence 3.6% (2/56)