

Differences in Bacteriologic Treatment Failures in Acute Otitis Externa Between Ciprofloxacin/Dexamethasone and Neomycin/Polymyxin B/Hydrocortisone: Results of a Combined Analysis.

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OBJECTIVE: To compare treatment failure rates for the two major acute otitis externa (AOE) pathogens, *Pseudomonas aeruginosa* and *Staphylococcus aureus*, by topical therapy with ciprofloxacin 0.3%/dexamethasone 0.1% (CDex) or neomycin 0.35%/polymyxin B 10,000 IU/mL/hydrocortisone 1% (Cort) based on clinical and microbiological failure in patients positive for these pathogens at baseline.

RESEARCH DESIGN AND METHODS: A combined analysis was conducted from two similar, but non-identical clinical trials involving CDex vs. Cort. Outcomes of the combined efficacy analysis were treatment failure rates and antibiotic susceptibility values for *P. aeruginosa* and *S. aureus*. The raw data for the treatment failure rates from the two studies were combined to calculate the overall treatment failure rates of each treatment group. Chi-square tests of independence were conducted to assess differences in treatment failure rates between treatment groups.

RESULTS: Of the 789 patients with culture-positive ears prior to the initiation of therapy, 61.0% (n = 481) were positive for *P. aeruginosa* and 8.9% (n = 70) were positive for *S. aureus*. While treatment failure rates for *S. aureus* were similar for the two therapies, CDex had a significantly lower treatment failure rate than Cort (5.1 vs. 13.0%; p = 0.0044) for *P. aeruginosa*. All of the persisting *P. aeruginosa* and *S. aureus* isolates were susceptible to fluoroquinolones and neomycin/polymyxin B.

LIMITATIONS: The analysis strength is dependent on pooled data from similar studies.

CONCLUSIONS: Otological ciprofloxacin 0.3%/dexamethasone 0.1% more effectively eradicates *P. aeruginosa* compared to Cort. Eradication of *S. aureus* by either drug was similar. These results favor CDex as a better first-line choice in the treatment of AOE compared to Cort.