

BY MICHAEL E. PICHICHERO, M.D.

ID CONSULT

Quinolone Ear Drops Beat Generics

Quinolone otic drops may represent a better choice for treating swimmer's ear in children than are the generics that

we're accustomed to using.

Both Floxin (ofloxacin otic solution 0.3%) and Ciprodex (ciprofloxacin 0.3% and dexamethasone 0.1% sterile otic suspension) have recently been approved for the treatment of acute otitis externa in children as young as age 6 months. Otolaryngologists are using these drugs extensively in children, but so far, the pediatric community has not embraced them. This lag is due in part to the way these products have been marketed. But I believe that inappropriate concern about fluoroquinolone-associated arthropathy has also impeded use of what appear to be products with greater efficacy and convenience, and possibly even lower cost, in the case of Floxin.

Overall, the data suggest that efficacy of Floxin and Ciprodex drops in treating acute otitis externa in children is greater than 90%, compared with about 80% for

the generics such as Cortisporin (neomycin, polymyxin B sulfates, and hydrocortisone otic solution), and about 70% for astringents such as acetic acid, isopropyl alcohol, or hydrogen peroxide.

In an open-label, phase III trial involving 439 children with acute otitis externa in Latin America, a 7-day course of Floxin given once daily—5 drops for children aged 6 months to 12 years, 10 drops for those 13 years and older—produced eradication rates of 96% overall (Clin. Ther. 2004;26:1046-54).

Similar efficacy for Ciprodex was seen in a recent randomized, blinded multicenter trial in 396 otitis externa patients older than 1 year. Clinical cure rates at day 18 were 90.9% after 7 days of Ciprodex (3-4 drops twice daily), compared with 83.9% after 7 days of Cortisporin (3-4 drops three times daily), while microbiologic eradication rates were 94.7% and 86%, respectively (Curr. Med. Res. Opin. 2004;20:1175-83).

Antimicrobial resistance to the older topicals might be one reason for the quinolones' superior efficacy. Data from two multicenter trials conducted by Floxin manufacturer Daiichi Pharmaceuticals Inc. suggested that the two most common organisms associated with otitis externa—*Pseudomonas aeruginosa* and *Staphylococcus*

aureus—appear to be developing resistance to Cortisporin but not to Floxin (South. Med. J. 2004; 97:465-71).

The quinolones are also more convenient to administer. Floxin is available in 5-mL and 10-mL plastic dropper bottles and as "singles" containing individual once-daily doses (one packet for ages 6 months to 12 years and two for children aged 13 years and older, given for 7 days). The dropper bottles also allow for once-daily dosing (5 drops for ages 6 months to 13 years and 10 drops for ages 13 and older). Ciprodex dosing for patients 6 months and older is four drops twice daily for 7 days.

In contrast, 3 drops of Cortisporin must be administered three or four times daily to children with acute otitis externa.

There is some disagreement about whether a corticosteroid—contained in Ciprodex and Cortisporin but not Floxin—adds significant benefit. While the anti-inflammatory effect does produce greater symptomatic relief, it also may dampen the immune response. Because the data suggest Floxin is just as effective as Ciprodex, and more effective than Cortisporin, the steroid may not be much of an advantage.

Floxin can be slightly cheaper than the generic Cortisporin on a per-treatment basis: Computed with the average wholesale price for a 5-mL bottle, the cost of 5 drops of Floxin daily for 7 days is \$17.60, compared with \$18.34 for a 10-day treatment of Cortisporin, 4 drops daily. The cost of Ciprodex is somewhat higher than for the generic.

In addition to being more effective and convenient without costing more, quinolone drops are also quite safe. Systemic absorption of these topicals is essentially zero. And even with oral administration, combined data from studies involving approximately 16,000 children and adolescents have not revealed a single case of arthropathy, which has been seen in juvenile animals only. Safety data such as these led to the recent approval of

ciprofloxacin for children 1 year and older with complicated urinary tract infections or pyelonephritis.

In four Bristol-Myers Squibb-sponsored trials analyzed by my group and others, there was no evidence of arthrototoxicity among 867 children with recurrent or acute otitis media who were treated with gatifloxacin. Our results will be published in the August issue of Clinical Infectious Diseases.

Of course, as physicians we should also try to help our patients avoid swimmer's ear in the first place, and especially to prevent recurrence in those who've had the problem in the past. Swimming is the No. 1 cause of otitis externa, with lakes and rivers being the culprit more often than chlorinated swimming pools. Patients who regularly swim in natural bodies of water might be advised to place a couple drops of rubbing alcohol or hydrogen peroxide in each ear after emerging from the water.

In swimmer's ear, the child complains of ear pain, but often you can't see the eardrum because the ear is so swollen.

The second-most frequent cause of otitis externa in children occurs among those with drainage from tympanostomy tubes or a perforated eardrum.

The third is trauma. Children—or their parents—may stick cotton swabs or bobby pins in the child's ear, perhaps in an attempt to remove wax, and end up abrading the canal. This kind of trauma can introduce bacterial contamination. Such practices should be discouraged.

I served as a one-time consultant to Floxin manufacturer Daiichi. I have no affiliation with Bayer Pharmaceuticals Corp. or its subsidiary Alcon Laboratories Inc., the makers of Ciprodex. ■

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Antibiotics Not Always Needed In Childhood Conjunctivitis

BY MICHELE G. SULLIVAN

Mid-Atlantic Bureau

Most children with conjunctivitis will get better by themselves and don't need an ophthalmic antibiotic, Peter W. Rose, M.B., and his colleagues reported.

"Parents should be encouraged to treat children themselves without medical consultation, unless their child develops unusual symptoms or the symptoms persist for more than a week," said Dr. Rose of Oxford (England) University. The researchers suggest that parents cleanse their children's eyes with eye drops instead of rushing to the pediatrician at the first sign of conjunctivitis (Lancet 2005;366:37-43).

The investigators randomized 326 children (mean age 3.3 years) with a diagnosis of conjunctivitis to chloramphenicol eye drops (0.5%) or placebo (distilled water containing 1.5% boric acid and 0.3% borax). Parents used drops every 2 hours for the first 24 hours when the child was awake and four times a day until 48 hours after symptoms resolved.

After 7 days, 86% in the antibiotic group were clinically cured, compared with 83% of the placebo group. When 307 of the children were followed up at 6 weeks, fewer than 5% had experienced a relapse or new infection.

Only one reaction—a case of swollen eyelids and face—was

attributed to antibiotic treatment.

Baseline cultures showed 80% had bacterial infections. In this group, the clinical cure rate did not differ significantly between chloramphenicol and placebo (85% vs. 80%), but more of the chloramphenicol group than the placebo group experienced bacterial eradication (40% vs. 23%).

Although eradication is not necessary for a clinical cure, the researchers said failure to eradicate bacteria could impact transmission. "Despite our results, antibiotic treatment might still reduce the absolute number, and, hence, transmissibility of pathogens, and further research might be necessary if antibiotics cease to be prescribed for this disorder."

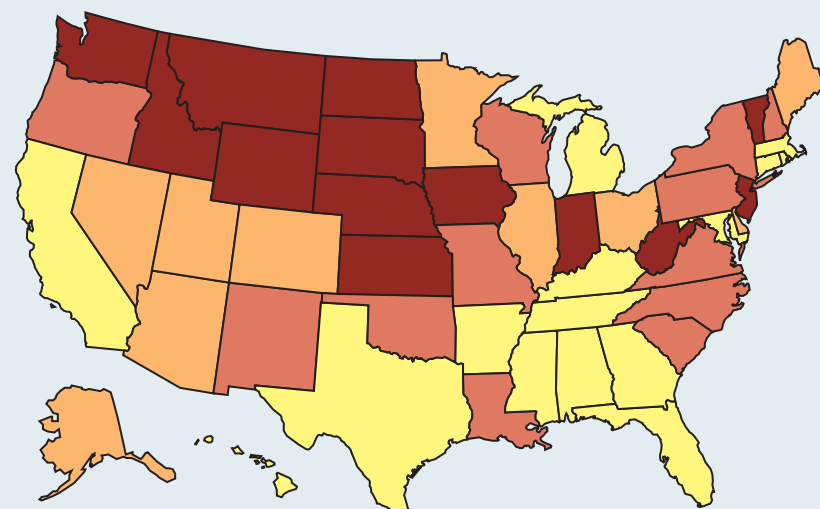
The data appear to support prescription policy changes for uncomplicated conjunctivitis, but it still could be a tough sell for parents and schools, they admitted. ■



Here is a case of hemorrhagic conjunctivitis with subconjunctival hemorrhages and lid swelling.

DATA WATCH

Estimated Chickenpox Vaccination Coverage, 2003



*2003 national coverage rate, ±2.5%.

Source: National Partnership for Immunization.

■ ≥87.4% or more
■ 77.2%-82.2%
■ 82.3%-87.3%*
■ ≤77.1%

Rerunning to correct color legend in graphic that ran in PEDIATRIC NEWS, June 2005, page 19.