

Information for Clinicians on the Treatment of Pertussis with Clarithromycin or Azithromycin

There are limited data to guide a choice of the duration of clarithromycin (Biaxin) for pertussis treatment and prophylaxis. Based on available information, treatment for at least 7 days is acceptable although further studies are needed.

The CDC's Guidelines for the Control of Pertussis Outbreaks (1) state:

"Although in vitro studies suggest that *B. pertussis* is susceptible to azithromycin and clarithromycin (2), there are limited data on their effectiveness against pertussis in vivo. Aoyama, et al. have studied nine pertussis patients who were administered clarithromycin, 10mg/kg per day, twice a day for 7 days, and eight who were administered azithromycin, 10mg/kg per day, once a day for 5 days (3). For each patient, two erythromycin-treated patients with pertussis were selected as controls. After one week of treatment, all clarithromycin and azithromycin treated patients, and 16 of 18 patients in the first and 13 of 16 patients in the second erythromycin treatment control groups were culture negative, respectively. No bacterial relapse was detected in any of the groups."

In another study, Lebel, et al. compared the microbiologic and clinical efficacy and the clinical safety of a 7-day course of clarithromycin (7.5 mg/kg/dose twice a day) vs. a 14-day course of erythromycin (13.3 mg/kg/dose three times a day) in children from 1 month to 16 years of age presenting with clinically defined pertussis syndrome (4). The clarithromycin (n = 76) and erythromycin (n = 77) groups were matched for age and previous pertussis immunization. Microbiologic eradication and clinical cure rates were 100% (31 of 31) for clarithromycin and 96% (22 of 23) for erythromycin. The clarithromycin group had significantly fewer adverse events (45% [34 of 76] for clarithromycin vs. 62% [48 of 77] for erythromycin; P = 0.035), and compliance with the medication regimen was significantly higher in these patients.

According to the American Academy of Pediatrics (5), "Studies have documented that the newer macrolides, azithromycin dihydrate (10-12 mg/kg per day, orally, in 1 dose for 5 days; maximum 500 mg/day) or clarithromycin (15-20 mg/kg per day, orally, in 2 divided doses; maximum 1g/day for 7 days), may be as effective as erythromycin and have fewer adverse effects and better compliance." However, clarithromycin and azithromycin have not been FDA approved for infants younger than 6 months of age.

As new information becomes available, these recommendations could change so healthcare providers should periodically review the Red Book (5) and the CDC's guidelines (1) for additional guidance.

1. Centers for Disease Control and Prevention. Guidelines for the Control of Pertussis Outbreaks. Centers for Disease Control and Prevention: Atlanta, GA, 2000. Available online: <http://www.cdc.gov/nip/publications/pertussis/guide.htm>
2. Hoppe JE, Bryskier A. In vitro susceptibilities of *Bordetella pertussis* and *Bordetella parapertussis* to two ketolides (HMR 3004 and HMR 3647), four macrolides (azithromycin, clarithromycin, erythromycin A, and roxithromycin), and two ansamycins (rifampin and rifapentine). *Antimicrobial Agents Chemotherapy*. 1998 Apr;42(4):965-6.
3. Aoyama T, Sunakawa K, Iwata S, et al. Efficacy of short-term treatment of pertussis with clarithromycin and azithromycin. *Journal of Pediatrics*, 1996;761-4.
4. Lebel MH, Mehra S. Efficacy and safety of clarithromycin versus erythromycin for the treatment of pertussis: a prospective, randomized, single blind trial. *Pediatric Infectious Diseases Journal*. 2001 Dec;20(12):1149-54.
5. American Academy of Pediatrics. Pertussis. Red Book: Report of the Committee on Infectious Diseases. 26th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2003:474. (see Erratum for Page 474: Under Treatment, second bullet, fifth sentence: maximum dosage for azithromycin dihydrate should be changed from 600 mg/day to 500 mg/day.)