

Which patients with suspected exposure to pertussis should receive prophylaxis?

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Evidence-based answer

Only high-risk close contacts of known cases should receive prophylactic antibiotics, according to the Centers for Disease Control and Prevention (CDC). The CDC defines high-risk as (1) infants who are <12 months, (2) those especially vulnerable to the complications of pertussis, or (3) those, such as health care workers, in

close contact with high-risk individuals (strength of recommendation [SOR]: **C**, based on consensus/expert opinion). Evidence is insufficient to support a benefit of prophylactic antibiotic treatment for all household pertussis contacts to prevent the development or spread of illness (SOR: **B**, based on a systematic review of studies).

Clinical commentary

Give special attention to high-risk close contacts, especially infants

Recently, in the medical college where I teach, a student came down with pertussis. Several weeks after the onset of symptoms, she was diagnosed and determined to be no longer contagious. When she coughed in class, however, I worried that she could have infected us all. No one received

prophylactic antibiotics. To date, I do not know of anyone who was in close contact with this student who has come down with the illness. However, direct special attention to high-risk close contacts, especially infants, as they can have devastating results from infection.

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FAST TRACK

All household contacts do not need prophylaxis to prevent the spread of pertussis

Evidence summary

A Cochrane review¹ of antibiotic use for pertussis prophylaxis, including studies published through 2002, found only 2 randomized, well-controlled trials (RCTs) that compared attack rates between contacts receiving placebo or antibiotic therapy. Neither trial included infants under age 6 months. The reviewers concluded that evidence was insufficient to determine a treatment benefit. The larger study² included 310 household or family contacts, randomized by house-

hold to 10 days of erythromycin estolate or placebo. Positive cultures or clinical pertussis developed in 4.8% of treated contacts and 6.1% of controls (relative risk [RR]=0.8; 95% confidence interval [CI], 0.3–2.2). Adverse side effects occurred in 34% of the erythromycin group and 16% of controls (RR=2.2; 95% CI, 1.4–3.3; number needed to harm=5.6).

Focus on those at high risk

Despite the paucity of RCTs, the CDC and other public health agency guide-

TABLE

Recommendations for pertussis prophylaxis

ORGANIZATION	RECOMMENDATION
Canadian guidelines ⁴	Reserve prophylaxis for <ul style="list-style-type: none"> • Vulnerable (high-risk) contacts • Those who care for vulnerable individuals Prophylaxis must be started within 21 days of exposure
Public Health Seattle and King County ⁵	Prophylax only high-risk individuals with <ul style="list-style-type: none"> • Prolonged (>1 hour) exposure to catarrhal stage disease • Contact within 3 feet • Direct contact with secretions (ie, kissing)
CDC ⁶	During institutional outbreaks <ul style="list-style-type: none"> • Treat early in symptomatic course • Prophylax only those at high risk • Warn healthy contacts to report new symptoms

lines recommend postexposure prophylaxis for certain close contacts to protect high-risk individuals, defined as those who could develop severe disease or experience adverse outcomes if pertussis developed.³⁻⁶

High-risk individuals include:

- Infants <1 year old
- Pregnant women in their third trimester
- the immunocompromised
- those with underlying medical condition such as chronic lung disease, respiratory insufficiency, or cystic fibrosis
- those who have close contact with any of the above high-risk individuals (eg, household members or health-care workers providing face-to-face care).

Close contact is defined as:

- confinement in a closed space for >1 hour with a known case, or
- direct contact with respiratory, oral, or nasal secretions from a symptomatic person, or
- face-to-face exposure within 3 feet of a symptomatic patient.

Clinical trials involving such patients have not been conducted.^{6,7} Maintenance of active vaccination status is an effective means to prevent the spread of pertussis

among the general population and has been suggested as a means to control local outbreaks,⁶ though it has no role in immediate postexposure prophylaxis for an individual. In one RCT, no (0/60) fully immunized child in a household with pertussis developed whooping cough, with or without antibiotic prophylaxis. Among unimmunized children, pertussis developed in 4/20 receiving erythromycin prophylaxis and 2/11 receiving placebo.⁸

Macrolides (erythromycin, clarithromycin, or azithromycin) are recommended for postexposure prophylaxis. Trimethoprim-sulfamethoxazole is a second-line agent.⁵ A short course of erythromycin (7 days), azithromycin (3-5 days), or clarithromycin (7 days) is as effective as a 2-week course of erythromycin in eradicating *Bordetella pertussis* from the nasopharynx.⁹

Recommendations from others

Recommendations from others are in the

TABLE. ■

References

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FAST TRACK

Maintenance of active vaccination status is an effective way to prevent pertussis spread among the general population