



Pathogen

Bordetella parapertussis is a bacterium that is similar to *B. pertussis* and causes a pertussis-like illness, but does not produce pertussis toxin.

Clinical symptoms

The symptoms of *B. parapertussis* infection are similar to those of pertussis (whooping cough) but are typically milder and infection may be asymptomatic. Studies have shown that persons with *B. parapertussis* infection may have prolonged cough, paroxysmal cough, whoop and vomiting, however these symptoms occur less frequently and for shorter duration than is typically seen with pertussis. Young infants (e.g., <6 months of age) may have a more severe course of parapertussis than older persons. Rarely, death can occur in infants with underlying health problems or in infants with *B. pertussis* coinfections (persons may be infected with *B. pertussis* and *B. parapertussis* at the same time).

Incidence of disease

It is estimated that 1% to 35% of known *Bordetella* infections are caused by *B. parapertussis*. Outbreaks are known to occur and have been reported recently in California.

Modes of transmission

Transmission typically occurs when a susceptible person inhales aerosolized droplets from the respiratory tract of an infected person. Transmission via contact with fomites is thought to occur rarely, if ever.

Incubation period

The incubation period is likely to be similar to that of pertussis: 7-10 days (range 5-21 days).

Period of communicability

Persons with parapertussis are likely to be most infectious shortly after disease onset and for up to three weeks if no treatment is given. Communicability ends after 5 days of treatment.

Other *Bordetella* species

B. bronchiseptica and *B. holmseii* can also infect humans. *B. bronchiseptica* primarily affects immunocompromised people and *B. holmseii* can cause chronic cough in healthy people. Infected people should be referred to an infectious disease specialist.

Laboratory diagnosis

B. parapertussis can be distinguished from *B. pertussis* via culture or PCR if a multi-target PCR assay is used that can detect insertion sequence elements (IS1001) specific to parapertussis.

Case definition

There is no specific case definition for *B. parapertussis* infection because it is not a nationally notifiable disease and is not reportable in California. However, outbreaks of *B. parapertussis* infection should be reported to CDPH.

Case management

There are no national guidelines for the treatment or public health management of *B. parapertussis* infection. However, because young infants may be at risk for severe *B. parapertussis* disease, it is recommended that infants <6 months of age and people in contact with young infants who have confirmed *B. parapertussis* infection be treated in an attempt to reduce disease severity and shorten the infectious period.

Limited data suggest that *B. parapertussis* is susceptible to macrolides and trimethoprim-sulfamethoxazole and can be treated similarly to *B. pertussis*. Current treatment recommendations are available at:

http://www.cdph.ca.gov/HealthInfo/discond/Documents/CDPH_Pertussis%20quicksheet_January%202014.pdf

Persons with *B. parapertussis* infection should avoid contact with young infants until they have received five days of treatment.

Postexposure prophylaxis (PEP)

Chemoprophylaxis of contacts within 2-3 weeks of cough onset of the index case should be considered for contacts at high risk for severe parapertussis disease. These contacts include: infants <6 months of age (particularly premature infants) and persons in contact with infants <6 months of age, including healthcare personnel. Starting PEP ≥ 3 weeks after exposure to an infectious case is probably of no benefit to the contact.

Vaccination

There is no vaccine for *B. parapertussis*; *B. pertussis* vaccines are thought to offer little or no protection against *B. parapertussis* infection.