Parapertussis Fact Sheet

Etiologic Agent

*Bordetella parapertussis* causes parapertussis, a pertussis-like illness. Parapertussis is generally milder than pertussis (whooping cough), as *B. parapertussis* does not produce pertussis toxin.

Clinical Description

The symptoms of parapertussis are similar to pertussis but are typically milder and shorter in duration. Infected persons may have prolonged cough, paroxysmal cough, post-tussive vomiting and whoop, however these symptoms generally present less frequently and for a shorter duration than in pertussis infections. Infants aged less than six months are at higher risk of more severe disease; rarely, deaths have been reported in infants with underlying health problems or those that are co-infected with *B. pertussis*.

Modes of Transmission

Parapertussis is transmitted person-to-person through large, aerosolized respiratory droplets or direct contact with secretions from the respiratory tract of infected individuals. Indirect spread through fomites is thought to occur rarely, if ever.

Incubation Period

The incubation period of parapertussis is unknown, but is thought to be similar to pertussis, generally 7 to 10 days (range 5 to 21 days).

Period of Communicability or Infectious Period

Persons infected with parapertussis are most likely infectious shortly after they develop symptoms and may remain infectious for up to three weeks if no treatment is given. As with pertussis, persons are thought to be no longer infectious after five days of an appropriate antibiotic.

Epidemiology

While the epidemiology of *B. parapertussis* is unknown, studies have shown that it is likely similar to that of *B. pertussis*. One study in Italy showed the prevalence of paroxysmal cough at 76 percent and post-tussive vomiting at nearly 40 percent. However, duration of symptoms in parapertussis was significantly shorter than in pertussis infections, in both vaccinated and unvaccinated children1. Wisconsin has shown a prevalence of 11 to 13 percent of parapertussis among all *Bordetella* infections2, others have estimated that up to 25 percent of known Bordetella infections are *B. parapertussis*, especially in younger age groups3.

Case Definition

There is no case definition for parapertussis infection, as it is not a nationally notifiable disease and is not reportable in Colorado.
Laboratory Testing

*B. parapertussis* can be distinguished from *B. pertussis* by culture and/or PCR, if a multi-target PCR is used. The insertion sequence element IS1001 is specific to *B. parapertussis*. Most commercial laboratories test for both *B. pertussis* and *B. parapertussis*, and parapertussis testing is available on a fee for service basis at the CO Laboratory Services Division. Consult with a CDPHE vaccine preventable epidemiologist in the case of a suspected outbreak, as fees may be waived in support of an outbreak investigation.

Disease Control Measures:

Treatment

There are no national guidelines for treatment or investigation of suspect parapertussis cases or for prophylaxis of close contacts. However, because infants <6 months of age may be at increased risk of severe disease, treatment is indicated for young infants, household members with an infant in the household, and those at higher risk of severe disease, i.e. immunosuppressed persons. Limited data suggests that *B. parapertussis* is susceptible to the same antibiotics as *B. pertussis* including macrolides (such as azithromycin and erythromycin) and trimethoprim-sulfamethoxazole (TMP-SMX)\(^4,5\). Parapertussis cases should avoid contact with young infants until they complete five days of antibiotic treatment.

Post Exposure Prophylaxis

High-risk contacts such as infants <6 months or immunosuppressed persons should be treated for five days with an appropriate antibiotic. Prophylaxis of healthy, asymptomatic contacts is not recommended, unless they have contact with persons at high risk of severe disease.

Vaccination

There is no vaccine for parapertussis. Current pertussis vaccines do not protect against *B. parapertussis*.

Exclusion

Persons with confirmed parapertussis do not need to be excluded from school or work, but should avoid contact with infants <6 months until they have completed five days of antibiotic treatment.

Reporting

Parapertussis is not reportable in Colorado.

References