pennsylvania
DEPARTMENT OF HEALTH

PERTUSSIS

Overview

Pertussis, also called whooping cough, is a very contagious disease of the lungs and airways that has been a common childhood illness for centuries. Pertussis is caused by bacteria that are found in the nose, mouth and throat of an infected person.

Signs and Symptoms

Symptoms of pertussis usually begin about 10 days after infection but may start as early as six days or as long as twenty days after infection. The earliest symptoms are like those of the common cold – runny nose, sneezing, low-grade fever and mild cough. Coughing then gradually becomes more severe, often leading to "fits" (also called paroxysms) of numerous, rapid coughs. At the end of the coughing fit, a long attempt to breathe may be followed by a "whoop" sound. Babies younger than 6 months may not have the strength to make a whoop sound. Vomiting can also occur at the end of a coughing episode. Children and young infants, especially, look very ill when in this stage of pertussis. Coughing fits are usually more common at night and can last for many weeks, even after antibiotic treatment. Although children and adults may experience milder symptoms, they still can spread pertussis.

Causes and Transmission

Pertussis is caused by bacteria called *Bordetella pertussis*. People get pertussis by breathing in droplets containing the bacteria that have become airborne from an infected person. An infected person is most contagious early in his/her illness and can spread pertussis for up to three weeks after symptoms start if not treated with an antibiotic. Starting an antibiotic treatment can shorten the time a person is contagious to five days after the start of treatment.

Risk Factors

Pertussis can occur at any age but is more common in infants, who are also at higher risk for severe or fatal pertussis. People who are not immunized against pertussis have the highest risk for infection and severe symptoms.

Complications

The most common complication of pertussis is pneumonia. Other complications include dehydration, seizures, brain damage from lack of oxygen and death. Most cases of severe disease and death occur in infants younger than 6 months.

Tests and Diagnosis

A diagnosis of pertussis is initially based on symptoms. The diagnosis should then be confirmed with laboratory testing on a nasopharyngeal (NP) specimen, ideally obtained within the first couple of weeks of coughing. Although the gold standard

test for pertussis is culture, this test may be difficult to do. More commonly, laboratories are performing polymerase chain reaction (PCR) tests to detect the bacteria in an NP specimen. However, due to lack of standardization of this test between laboratories, there may be issues in the reliability of this test. Poor collection technique can affect results for both culture and PCR testing. 2

Treatments

Pertussis is generally treated with antibiotics, and early treatment is very important. Treatment may make infection less serious if it is started early, before coughing fits begin. Treatment can also help prevent transmission of the disease to close contacts (people who have spent a lot of time around the infected person). Treatment after three weeks of illness is unlikely to help because the bacteria may be gone from the body, even though symptoms may continue. This is because the bacteria have already done damage to the body.

Prevention

There are several ways to prevent pertussis:

- Immunization is the best way to prevent pertussis:
  - Children should routinely be vaccinated with a vaccine called DTaP at ages 2 months, 4 months, 6 months, 15-18 months, and again at 4-6 years.
  - Adolescents and adults should be up to date with pertussis vaccine by getting a vaccine called Tdap, which can be given as early as 11-12 years of age.
  - A close contact of a case of pertussis who is younger than 7 years of age and has not received four doses of DTaP or who has not received a dose of DTaP within 3 years should get a dose of DTaP as soon after exposure as possible.
  - If an adult or adolescent can have close contact with an infant younger than 12 months of age (i.e., a new baby in the household) and more than two years have passed since getting vaccine containing pertussis, that adult/adolescent should get a dose of Tdap. This includes pregnant women, who should get a dose with each pregnancy.
  - All health care workers should get a single dose of Tdap if they have not received it before.

- Antibiotics are sometimes recommended for close contacts of a case of pertussis, especially if they live with a baby younger than 1 year of age.
- Suspected cases of pertussis should stay away from young children and infants until they have received at least five days of antibiotic treatment. If a suspected case of pertussis does not take antibiotic treatment, the infected person should stay isolated for three weeks after the start of coughing bursts or until the end of cough, whichever is first.

In accordance with Pennsylvania Department of Health regulations, any child and staff member of a school or daycare who is suspected of having or has been diagnosed with pertussis must be excluded from school/daycare for three weeks

from start of symptoms or for five days after starting appropriate antibiotic treatment.

Disease Patterns
Pertussis is a common disease in children worldwide, regardless of climate, ethnicity or geography. Pertussis does not have a distinct seasonal pattern but may increase in the summer and fall. Outbreaks tend to occur every three to four years.

Additional Information
Centers for Disease Control and Prevention:
http://www.cdc.gov/pertussis/index.html
Epidemiology and Prevention of Vaccine-Preventable Diseases book (Pink Book), pertussis chapter: http://www.cdc.gov/vaccines/pubs/pinkbook/pert.html

This fact sheet provides general information. Please contact your physician for specific clinical information.

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