Pneumococcal (19 Years and Older)

Traveler Summary

Key Points

- Pneumococcal disease is a bacterial infection occurring worldwide acquired through direct contact with respiratory secretions from infected persons.
- Risk is increased for those at extremes of age and persons with underlying medical conditions. In temperate climates, pneumococcal disease is more common in winter and early spring.
- Symptoms include sudden onset of fever, chills, cough, difficulty or rapid breathing, and chest pain.
- Consequences of infection include inflammation of brain membranes, respiratory failure, blood infection, or death.
- Prevention includes observing respiratory hygiene (cough and sneeze etiquette) and hand hygiene (frequent, thorough handwashing).
- Two types of pneumococcal vaccine are available, and some people will need both. Prevnar 13 is routinely given to infants in a 4-dose series, whereas Pneumovax 23 is given routinely as a single-dose to adults 65 years and older. Both vaccines are given to persons with weakened immune systems or certain medical conditions or risk factors. Two other pneumococcal vaccines, Prevnar 20 and Vaxneuvance, were recently approved and considerations for their use will be discussed later in 2021.
- Side effects of the vaccines are most commonly injection-site reactions.
- Duration of vaccine protection from Prevnar 13 is lifelong; no booster is required. Duration of protection from Pneumovax 23 is at least 5 years; 1 or 2 boosters are recommended for certain persons.

Introduction

Pneumococcal disease, a bacterial infection transmitted person to person through direct contact with respiratory secretions from infected persons or carriers, is a leading cause of serious illness, especially among unvaccinated children and adults. Travelers are at risk of respiratory illnesses of all kinds but are generally not at increased risk for serious pneumococcal disease (e.g., invasive pneumococcal disease), except for persons with certain immunocompromising conditions and those at the extremes of age. More than 100 different serotypes (variations) of the bacteria exist and most cause serious disease. Routine childhood vaccination in most developing countries has reduced circulation of some serotypes of bacteria in the community, but these types may still be circulating in countries with lower vaccination rates.

Risk Areas

Pneumococcal disease occurs worldwide but is more common in developing countries, with most deaths occurring in Africa and Asia. In temperate climates, pneumococcal disease is more prevalent in winter and early spring. Outbreaks are uncommon in the US but generally occur in crowded environments, such as daycare settings.

Transmission

Pneumococcal disease is mainly transmitted person to person via direct contact with respiratory droplets or secretions (e.g., mucus or saliva) from infected persons or from healthy carriers (mainly infants and young children, especially in low- and middle-income countries) of the bacteria.

Risk Factors

Risk is increased for those at extremes of age and those with underlying medical conditions or weakened immune systems. Persons with cochlear implants are at increased risk of pneumococcal meningitis (inflammation of the brain membranes causing stiff neck, headache, lack of energy, or seizures).

On aircraft, risk for infection (although very low) exists for persons sitting within a 2-seat range (in back, front, and beside) of an infectious traveler.

Symptoms

Symptoms most commonly appear 1 to 3 days following exposure and include sudden onset of fever, chills, productive cough (with or without pus or blood-tinged sputum), and general discomfort. Chest pain, difficulty or rapid breathing, and shortness of breath may also occur. Fever, shortness of breath, or altered mental status may be the initial symptoms in the elderly.

Consequences of Infection

Pneumococcal disease can lead to meningitis, respiratory failure, permanent nerve damage, blood infection, or death (5%–22% of cases depending on age and type of pneumococcal disease).

Need for Medical Assistance

Persons who develop symptoms of pneumococcal disease should seek medical attention.

Prevention

Nonvaccine

Observe respiratory hygiene (cough and sneeze etiquette) and hand hygiene (frequent, thorough handwashing). Penicillin can also prevent pneumococcal infection in persons without a functioning spleen, especially those with sickle cell disease. Immune globulin (a human blood-derived product) may be given as temporary protection for children with certain medical conditions who have serious recurrent bacterial infections.

Vaccine

Four pneumococcal vaccines (Prevnar 13, Pneumovax 23, Prevnar 20, and Vaxneuvance) are approved in the US; however, only 2 (Prevnar 13 and Pneumovax 23) are available in the US and most developed countries, and some people will need both. Recently approved Prevnar 20 and Vaxneuvance availability is not yet known and considerations for their use will be discussed later in 2021. Routine childhood vaccination with Prevnar 13 in most developed countries over many years has reduced the rate of bacterial infection and serious pneumococcal disease in persons 65 years and older; however, Prevnar 13 vaccine serotypes may still be circulating in countries with lower vaccination rates, thus increasing risk in this age group.

- Prevnar 13 is given routinely as a childhood vaccination to children aged 2-59 months and is recommended for all persons 5 years and older with certain medical conditions or weakened immune systems. Travelers 65 years and older visiting countries with lower vaccination rates may also receive this vaccine following discussion with the health care provider.
- Pneumovax 23 is given routinely to persons 65 years and older, persons 2 years and older with certain medical conditions or weakened immune systems, cigarette smokers, and residents of nursing homes or other long-term care facilities.

Side Effects

The most common vaccine side effects include injection-site reactions such as pain, swelling, and redness. Fever, decreased appetite, irritability, and increased or decreased sleeping may also occur with Prevnar 13. Headache, lack of energy, fatigue, and muscle pain may also occur with Pneumovax 23. Local reactions occur more frequently after the second dose of Pneumovax 23 than after the first dose.

Persons with underlying medical conditions or those who have concerns about the vaccine should speak to their health care provider before vaccine administration.

Timing

Many people will require both Prevnar 13 and Pneumovax 23; they cannot be administered within 8 weeks of each other. Prevnar 13 should be given first when both are indicated.

Prevnar 13 is given as follows:

- Routine, regardless of travel, for children 15 months and younger: 4 doses, given at ages 2, 4, 6, and 12-15 months
  - If earlier protection is needed for travel, the first 3 doses may be given as soon as 4 weeks apart. Different regimens apply if vaccination was started late.
- Children 18 years or younger with certain medical conditions: 1 or 2 doses
- Adults aged 19-64 years with a weakened immune system: 1 dose

- Unvaccinated adults 65 years and older with travel to risk country: 1 dose

Booster doses of Prevnar 13 are not needed.

Pneumovax 23 is given as follows:

- Routine, regardless of travel, for all adults 65 years and older: 1 dose
  - Delay until at least 5 years after the previous dose if 1 or more doses of Pneumovax 23 were given prior to age 65 years for an indicated condition.
- Persons 2 years and older who are immunocompromised or have certain medical conditions or risk factors: 1 dose
- A minimum interval of 8 weeks between a dose of Pneumovax 23 (if indicated) and a previously given dose of Prevnar 13 may be used.

A second dose of Pneumovax 23 is needed in some persons younger than 65 years; administration should be 5 years after the first Pneumovax 23 dose.

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