Bacterial Sexually Transmitted Diseases - Advanced

Learning Objectives

• Differentiate between different bacterial STDs and their symptoms.

Single-celled organisms. Can they be dangerous?

These represent chlamydia. Innocent-looking single-celled organisms. But these bacteria can lead to painful and devastating consequences.
Bacterial STDs

Many STDs are caused by bacteria. Some of the most common bacterial STDs are chlamydia, gonorrhea, and syphilis.

Chlamydia

Chlamydia is an STD caused by the bacterium *Chlamydia trachomatis*. It is the most common STD in the U.S. each year; about four million new chlamydia infections occur in Americans. As shown in Figure 1.1, females are much more likely to develop chlamydia than males. This figure also shows how common this STD is in teens and young adults compared to in older people. This is typical of most STDs.

![Chlamydia Rates by Sex and Age, AI/AN Non-Hispanic, 2004](image)

**FIGURE 1.1**
This bar graph shows the number of cases of chlamydia per 100,000 people in the United States in 2004 by age and sex. Chlamydia rates were greatest for both sexes between the ages of 15 and 34. The rates in females at all ages were much greater than the rates in same-aged males.

Symptoms of chlamydia may include a burning sensation during urination and a discharge from the vagina or penis. Chlamydia can be cured with antibiotics. However, in the majority of cases, there are no symptoms. As a result, many people are not aware that they are infected and do not seek treatment.

It is important to detect and treat chlamydia infections even when they do not cause symptoms. Untreated chlamydia can lead to more serious problems, especially in females. Almost half of all women with untreated chlamydia develop pelvic inflammatory disease (PID), which is an infection of the uterus, Fallopian tubes, and/or ovaries. PID can lead to scarring of the reproductive organs, which may cause pain and difficulty becoming pregnant. Chlamydia causes an estimated half million cases of PID in the U.S. each year.

In addition to sexual transmission, chlamydia can be passed from a woman to her baby before or during birth. Before birth, a chlamydia infection of the fetus may cause the fetus to be born too soon. During birth, a baby’s eyes can become infected with the bacteria. If the eye infection is not treated, it can lead to blindness. Because chlamydia is common and often symptomless, newborns are routinely treated with eye drops to prevent chlamydia eye infections from developing.
Gonorrhea

**Gonorrhea** is an STD caused by the bacterium *Neisseria gonorrhoeae*. Gonorrhea is also a common STD. In the U.S., an estimated 700,000 people are infected with gonorrhea each year.

Symptoms of gonorrhea may include painful urination and discharge from the vagina or penis. Gonorrhea usually can be cured with antibiotics, although the bacteria have developed resistance to the most commonly used antibiotics. Gonorrhea infections may not cause symptoms, especially in females, so they often go untreated. Untreated gonorrhea can lead to PID in females. In males, it can lead to inflammation of the epididymis, prostate, and urethra.

Gonorrhea can be passed from an infected woman to her baby during childbirth. This may cause an eye infection. The infection must be treated promptly to prevent blindness.

Syphilis

**Syphilis** is a STD caused by the bacterium *Treponema pallidum*. In the U.S., about 70,000 new cases of syphilis occur each year. Syphilis is less common than either chlamydia or gonorrhea, but it is more serious if it is not treated. Untreated syphilis can even cause death.

Early symptoms of infection with syphilis include the development of a small sore on or near the genitals. The sore is painless and heals on its own, so it may go unnoticed. Many people do not realize they have become infected until much later, so they do not seek treatment. If diagnosed and treated early, most cases of syphilis can be cured with antibiotics. However, if syphilis goes untreated, the disease may progress through the stages shown in **Table 1.1**. Untreated syphilis can eventually cause serious damage to the heart, brain, and other organs.

**TABLE 1.1**: Stages of Syphilis Infection

<table>
<thead>
<tr>
<th>Stage</th>
<th>Time After Initial Infection</th>
<th>Signs and Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>2 days</td>
<td>Small sore on genitals</td>
</tr>
<tr>
<td>Secondary</td>
<td>1-6 months</td>
<td>Rash, fever, sore throat, and headache</td>
</tr>
<tr>
<td>Latent</td>
<td>6-12 months</td>
<td>None</td>
</tr>
<tr>
<td>Tertiary</td>
<td>1-10 years</td>
<td>Chronic inflammation, damage to the aorta and heart, narrowing of arteries, stroke, meningitis, and muscle weakness</td>
</tr>
</tbody>
</table>

Summary

- The most common STDs caused by bacteria include chlamydia, gonorrhea, and syphilis.
- Chlamydia is the most common STD and may not exhibit symptoms.
- Symptoms of gonorrhea may include painful urination and discharge, but it may also not exhibit symptoms.
• Untreated syphilis can eventually cause serious damage to the heart, brain, and other organs.
• Bacterial STDs can usually be treated with antibiotics, especially when diagnosed early.

Review

1. Why is it important to treat chlamydia even though there may be no symptoms?
2. What are some bacterial STDs that can be transferred from mother to child? What complications can these infections cause?
3. Why is it so important to treat syphilis when it is diagnosed early?

References