

Sexually Transmitted Diseases (STDs)

CLS 212: Medical Microbiology

Zeina Alkudmani

What are STD's?

- STD's are infections that are spread from person to person through intimate sexual contact.
- They are also called: **sexually transmitted infections (STI's)** or **venereal disease (VD)**.
- They don't only affect the genital and urinary tracts, but also the skin, mucous membranes, blood, lymph, digestive system, and many other organs.
- STD's are dangerous because they are easily spread and most of the time asymptomatic.

Sexually Transmitted Diseases (STD's)

```
graph TD; A[Sexually Transmitted Diseases (STD's)] --> B[Bacteria]; A --> C[Viruses]; A --> D[Protozoa]; A --> E[Fungi]; B --> B1["Chlamydia trachomatis<br/>Neisseria gonorrhoeae<br/>Treponema pallidum"]; C --> C1["HSV-2<br/>HPV<br/>HIV<br/>HBV, HCV"]; D --> D1["Trichomonas vaginalis"]; E --> E1["Candida albicans"];
```

Bacteria

Chlamydia trachomatis
Neisseria gonorrhoeae
Treponema pallidum

Viruses

HSV-2
HPV
HIV
HBV, HCV

Protozoa

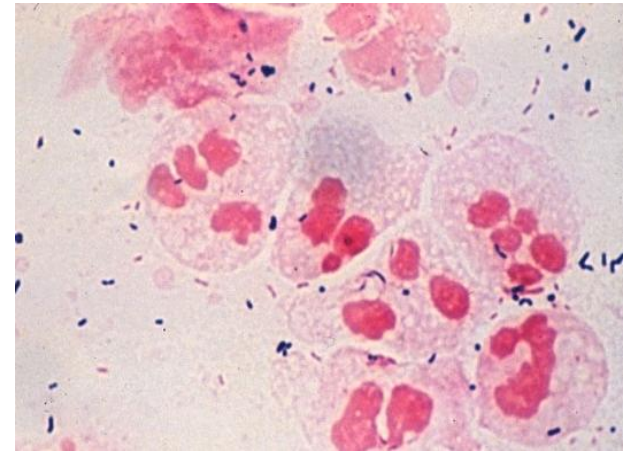
Trichomonas vaginalis

Fungi

Candida albicans

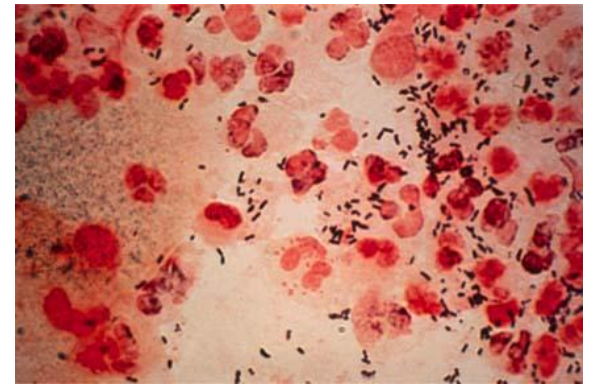
Chlamydia trachomatis

- Chlamydia is one of the first most important sexually transmitted bacterial infections.
- Cause disease to the genitourinary tract and the eye (non-gonococcal urethritis and ocular infections).
- affect both sexes.
- **Symptoms:**
 - It is known as the infectious silent disease because it is asymptomatic in $\frac{3}{4}$ of infected women and $\frac{1}{2}$ infected men.
 - **Male:** thin gray-white discharge, painful testes. **Urethritis** or Infection of the prostate and rectum may occur.
 - **Female:** vaginal discharge or bleeding, abdominal pain. **Cervicitis** which may progress to **pelvic inflammatory disease**.
- **Repeated or chronic infection can lead to sterility and ectopic pregnancy.**



Neisseria gonorrhoeae

- Gram –ve diplococci. Classified as **pyogenic** cocci because the infection is characterized by the production of purulent (pus like) material comprised largely of WBC. The disease is often called **Gonorrhea**.
- **Transmission:** sexual contact or during delivery (**ophthalmia neonatorum**) which can cause blindness to the baby if not treated.



- **Symptoms:** are more acute and easier to diagnose in male.
 - **Male:** yellow, purulent urethral discharge, painful urination.
 - **Female:** greenish-yellow discharge, bleeding, endocervicitis. If it progresses to the uterus, it may lead to tubal scarring and infertility, and fibrosis can occur.
 - Rectal infection (in homosexuals), and pharyngitis (oral-genital contact).

Treponema pallidum

- Syphilis can present in one of four different stages: primary, secondary, latent, and tertiary. It may also occur congenitally.

I. Primary Syphilis: (3–90 days after the initial exposure)

- A skin lesion appears at the point of contact called a **chancre** (single firm, painless, non itchy skin ulceration). Lesions outside of the genitals may be painful.

II. Secondary Syphilis: (4-10 weeks after the primary infection)

- Reddish-pink non-itchy **rash** on the trunk and extremities including the palms and soles. Other symptoms may include fever, sore throat, malaise, weight loss, hair loss, and headache.

III. Tertiary Syphilis: (3-15 years after the initial infection)

- Divided into three different forms: **late neurosyphilis, cardiovascular syphilis, and gummatous syphilis** (soft, tumor-like balls of inflammation).

IV. Congenital Syphilis: (

- May occur during pregnancy or during the birth process. Common symptoms include: hepatosplenomegaly, rash, fever, neurosyphilis, and pneumonitis.

Herpes simplex virus type 2

HSV-2 can be transmitted by

Sexual Contact
Genital tract lesions

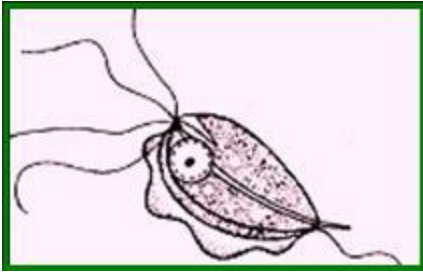
During delivery
Neonatal herpes

Symptoms

Most are asymptomatic. If symptomatic can cause local pain, itching, and systemic symptoms of fever, irritated and inflamed vulva and/or vaginal areas can be painful.

Symptoms

if untreated, disseminated CNS, leading to a high mortality rate.



Trichomonas Vaginalis

- **Trichomoniasis** is the most common protozoal urogenital tract infection of humans.
- It can live for 24 hrs in urine sample, or semen, or even a water sample. It can live on a wet surface for 1-2 hrs.
- **Transmission:** It is largely sexually transmitted. In very rare cases it can be transmitted by using infected person towels or by using public hot paths where the parasite can live.
- **Symptoms:**
 - **Male:** usually asymptomatic carriers (if symptomatic white discharge).
 - **Female:** fishy odor yellow or green discharge.

