Sexually Transmitted Diseases (STDs)

CLS 212: Medical Microbiology
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)

Bacteria
- Chlamydia trachomatis
- Neisseria gonorrhoeae
- Treponema pallidium

Viruses
- HSV-2
- HPV
- HIV
- HBV, HCV

Protozoa
- Trichomonas vaginalis

Fungi
- Candida albicans
Bacterial STDs
Genital Chlamydiadiasis

Etiologic Agent:
• *Chlamydia trachomatis*.
• Tiny intracellular bacteria.

Disease:
• It is a common STDs for both men and women
• Mostly asymptomatic (known as silent disease).

Symptoms:
✓ Male ➔ gray-white discharge from penis sometimes with painful testes.

✓ Female ➔ increased vaginal discharge maybe accompanied by painful urination, abnormal vaginal bleeding and abdominal pain.

It can also cause ocular infection or pneumonia in new born babies of infected mother.
Complications:
The main importance of the infection is that it can produce pelvic inflammatory disease (PID) in women, damaging the fallopian tubes and promoting sterility or ectopic pregnancy.
Bacterial STDs

Gonorrhea

Etiologic Agent:
- Neisseriagonorrhoeae (=gonococcus)
- Gram negative diplococci, intracellular.

Disease:
- Asymptomatic infection can occur in both sexes.
- Rectal infection (in homosexuals), and pharyngitis (oral-genital contact) is common.

Symptoms:
Men ➔ urethritis, pain during urination and thick, pus-containing discharge from penis.
Women ➔ painful urination and vaginal discharge and the symptoms tend to be mild, therefore women become unknowing carriers.
Complications:

• Can progress to pelvic inflammatory disease or ectopic pregnancy.

• It can cause eye infection to newborn babies of infected mothers.
Bacterial STDs
Syphilis

**Etiologic Agent:**
- Treponemapallidum
- Gram-variable tiny coiled spirochete.

**Disease:**
- the disease can occur in many forms and easily be confused with other disease.
# Bacterial STDs

## Syphilis

**Symptoms:**
- There are three clinical stages for the disease:

<table>
<thead>
<tr>
<th>Stage</th>
<th>Appearance of Symptoms</th>
<th>Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary syphilis</td>
<td>Around 3 weeks after infection</td>
<td>Painless red ulcer with hard rim at site of infection. Might pass un-noticed.</td>
</tr>
<tr>
<td>Secondary syphilis</td>
<td>After 2 to 10 weeks</td>
<td>Reddish-pink non-itchy <strong>rash</strong> on the trunk and extremities including the palms and soles. Other symptoms may include fever, sore throat, malaise, weight loss, hair loss, and headache.</td>
</tr>
<tr>
<td>Tertiary syphilis</td>
<td>After a latent period that can last for many years</td>
<td>Mental illness, blindness, strock and other nervous system disorder.</td>
</tr>
</tbody>
</table>
Viral STDs
Genital Herpes

**Etiologic Agent:**
- Herpes simplex virus type 2.

**Symptoms:**
- **Men** → infection in urethra may imitate the symptoms of bladder infection.
- **Women** → starts with itching, burning and often severe pain.
- Blisters surrounded by redness will appear on the genitalia. The blisters break leaving an ulcerated area.
- Ulcer heals slowly.
- Some individuals may have recurrences for life.

**Complication:**
- It can cause a serious risk to newborn babies if mother has a primary infection near the tie of delivery.
- the baby will have 1 in 3 risk of occurring the infection
- Baby often dies from overwhelming infection or is permanently disabled by it.
Viral STDs

Acquired Immunodeficiency Syndrome (AIDS)

**Etiologic Agent:**
- Human immunodeficiency virus type 1 or type 2.

**Symptoms:**
- 6 days to weeks after contracting the virus, some individuals may develop flue like symptoms that will go away by themselves.

- Typically HIV disease is unnoticed for almost 10 years and the first evidence of the disease is usually malignancy or unusual microbial infection.

- Death usually occurs from opportunistic infections.

- The most common diseases associated with HIV infection are Tuberculosis and STDs.
Protozoal STDs
Trichomoniasis

**Etiologic Agent:**

- *Trichomonas vaginalis*.
- It has flagella and show jerky motility on microscopic examination.
- Does not have a cyst form.

**Symptoms:**

- **Men** ➔ mostly asymptomatic, few may have discharge, burning urination and painful testes.
- **Women** ➔ fishy odor, yellowish-green discharge. Itching and burning.
Protozoal STDs
Trichomoniasis

**Transmission:**

- 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.
- 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.
- New born infants can contract the infection from infected mothers at birth.