



Sexually Transmitted Diseases

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Objectives of studying infection of the STDs

1. To explain the **public health significance** of infection of the Sexually Transmitted Diseases (STDs).
2. To outline the different **types of infection** of the STDs.
3. To know different types of **microorganisms** involved in the infection of the STDs.
4. To explain prevention and management of the STDs.

What is meant by sexually – transmitted diseases ?

- ❖ STD , are diseases that are commonly transmitted between partners through some form of sexual activity, most commonly vaginal intercourse, oral sex, or anal sex.
- ❖ They were commonly known as **Venereal Diseases**.
- ❖ Sexually – transmitted diseases (STDs) are :
 - important cause of morbidity in adults ,
 - in babies born to an infected mothers.
 - In some areas they are the commonest cause of infertility in women, they can also cause infertility in men.

✚ STD or infections present a major public health concern in both industrialised and developing countries .

✚ However, information about infection rates is hard to estimate ,especially for many developing countries.


✚ Different countries have different types and levels of reporting systems.

✚ It is thought that many reports substantially underestimate the number of new STD cases because social stigma and other factors prevent people seeking health care .

It is important to understand at least **five key points** about all STD's :

1. STD's **affect men and women** of all backgrounds and economic levels. They are most prevalent **among teenagers , younger than 25 years of age.**
2. The **incidence of STD's is rising, young people have become sexually active earlier , have multiple sex partners.**
3. Usually **STD's cause no symptoms.** But **a person who is infected may be able to pass the disease on to a sex partner** (ex. genital herpes, HIV).
4. When **diagnosed and treated early,** many STDs can be treated **effectively.**
 - Some infections have become **resistant to the drugs ,**
 - Some can **not be cured and can be terminal** (ex. HIV, chronic HBV).
 - **STD's increases one's risk for becoming infected with the HIV.**

5. Health problems caused by STD's tend to be **more severe** and more **frequent for women than for men** due to the increased frequency of **asymptomatic infections**, as a result many women do **not seek care** until serious problems develop.

- Some STD's can spread into the uterus and fallopian tubes to cause **pelvic inflammatory disease (PID)**  **involuntary infertility** and **ectopic (tubal) pregnancy**.

- STDs in women also may be associated with **cervical cancer** (e.g., **Human Papillomavirus infections**).

- STD's can be **passed from a mother to her baby before, during, or immediately after birth**. Some of these infections of the newborn can be cured easily (ex. **ophthalmia neonatorum**), but others may cause a baby to be permanently disabled (ex. **congenital syphilis**) or even die (e.g., **Herpes Simplex virus, HIV**).

Global Incidence

■ More than **1 million sexually transmitted infections (STIs)** are acquired every day **worldwide** .

■ Each year, there are an estimated 376 million new infections, with 1 of 4 **STIs**: **chlamydia, gonorrhea, syphilis and trichomoniasis**

■ The largest number of new infections occurred in the region of **South & Southeast Asia**, followed by **sub-Saharan Africa and Latin America & the Caribbean** .

■ In general, however, the prevalence of STDs tends to be **higher in urban residents, in unmarried individuals, and in young adults** .

High risk groups:

1. The highest frequency of STD occur in those who are most **active sexually**, particularly those who indulge in **promiscuous sexual behavior**.

2. **Unprotected sex with multiple partners**.

3. **Promiscuity before marriage** and **infidelity after marriage** represent the major behavioral factors underlying the occurrence of STD.

4. Young adult males away from home (sailors, soldiers, long distance semi truck drivers, migrant laborers, etc.)

Causative microorganisms for sexual transmitted diseases:

Many agents cause these diseases, more than 20 organisms;

- 1. Viruses:** Human Immune insufficiency Virus (**HIV**), Herpes Simplex Virus(**HSV**),Hepatitis B virus (**HBV**), Human Papilloma Virus (**HPV**).
- 2. Chlamydia:** Chlamydia trachomatis, non gonococcal urthritis, lymphgranuloma venereum.
- 3. Mycoplasma:** ureaplasma urealyticum, NGU
- 4. Bacterial:** Neisseria gonorrhoea (GC), Haemophilis ducry (chancoroid), Calymmatobacterium Granulomatis(granuloma inguinali),
- 5. Spirochetes:** Tryponema palladium (syphilis).
- 6. Fungi:** Candida albicans (candidiasis).
- 7. Protozoal:** Trichomonous vaginalis, Lice (pediculosis pubis), Scabies (mite sicrobtic scabies).

Reservoir:

The reservoir **is exclusively human**; includes

1. Untreated sick patients
2. Inapparent infection, especially in women.

Transmission:

Lesions are generally present on the genitalia, and the infective agents are also present in the **secretions** and **discharges** from the urethra and the vagina.

Extra genital lesions may occur through **haematogenic dissemination** as in **syphilis** or through inoculation of the infective agent at extra genital sites.

Transmission occurs through:

1. **Genital** contact
2. **Extra genital sexual** contact, e.g., kissing
3. **Non -sexual transmission**, e.g., mother to children transmission of HIV infection, syphilis (**transplacental**), and **gonococcal ophthalmia neonatorum**, or **accidental** contact as when doctors, dentists, or midwives handle tissues infected with **syphilis, hepatitis B virus**.
4. **Blood and blood products**, e.g., HIV infection, hepatitis B virus.
5. Rarely **fomites**, e.g., soiled moist clothing such as wet towels, may transmit vulvo-vaginitis to girls.

Gonorrhoea

- Gonorrhoea is a **bacterial infection**.
- It is sexually transmitted and can infect the **cervix, urethra, rectum, anus and throat**.
- Gonorrhoea is a **curable** STD but if left untreated can cause serious health problems such as **infertility, meningitis and septicemia**.
- Affecting more **women** than men.
- The responsible organism, **Neisseria gonorrhoea**, can survive only in a **moist environment** approximating body temperature and is transmitted only by **sexual contact** (genital, genito – oral , or genito - rectal) with an infected person. **It is not transmitted through toilet seats**.
- Only causes disease in **humans**
- **No animal host**

Gonococcal Syndromes

1. Men—urethritis , epididymitis
2. Women—cervicitis, salpingitis
3. Men and women—proctitis , pharyngitis
4. Newborns—ophthalmia , pneumonia

Incubation period : 2-7 days

Urethritis

- ✚ Mostly seen in **men** [although urethritis may accompany cervicitis in women (30%)]
- ✚ Symptoms—**discharge of pus** from the urethra & **dysuria** (pain on urination).
- ✚ **Profuse purulent discharge** seen in > 80% of men with GC urethritis

Cervicitis

- ✚ 30-50% of women may be **asymptomatic**
- ✚ Symptoms—**discharge, pruritus** (itching), lower abdominal pain, dysuria, dyspareunia (painful intercourse)
- ✚ Several other diseases can mimic GC symptoms—**chlamydia, herpes, trichomoniasis.**

Gonococcal pharyngitis:

- Most cases are asymptomatic, and gonococcus can be carried for months in the pharynx without being detected. In those having symptoms, complaints range from mild sore throat to severe pharyngitis with diffuse erythema and exudates.

Disseminated gonococcal infection: (arthritis – dermatitis syndrome)

- more common in women.
- DGI occurs when NG invades the bloodstream and spreads to distant sites in the body, leading to clinical manifestations such as:
 1. Low grade fever
 2. Migratory polyarthralgia , septic arthritis & Tenosynovitis
 3. Petechial/pustular skin rashes.
 4. bacteremia, or, on rare occasions, endocarditis or meningitis.

Gonorrhoea in children and infants

- During **childbirth**, gonococci infect the **conjunctiva (ophthalmia neonatorum)**, **pharynx**, respiratory tract and gastrointestinal tract of the body.
- **ophthalmia neonatorum**, the baby presents with **profuse purulent discharge from the eyes**.

Routine prophylaxis with 1% Silver nitrate , or 0.5% erythromycin or 1% tetracycline applied directly to the eye following birth prevents **ophthalmia neonatorum**

Diagnosis of gonorrhoea:

- Gram stain, to find **gram negative intracellular diplococci**.
- culture is indicated when Gram stain is negative.

Gonorrhoea in Newborns

- Infected as they pass through birth canal
- Eye inflammation, blindness
- Prevented by prophylaxis after birth



Non gonococcal Urethritis (NGU):

- ❖ Non gonococcal Urethritis (nonspecific urethritis) and cervicitis are the **most common sexual transmitted diseases**.
- ❖ The obligate intracellular bacteria **Chlamydia trachomatis** causes 40% - 50% of all cases of NGU.
- ❖ **In women, these infections can lead to:**
 - pelvic inflammatory disease (PID),
 - tubal infertility,
 - ectopic pregnancy, and
 - chronic pelvic pain.
- ❖ Lymphogranuloma venereum (LGV) is another type of STD caused by *C. trachomatis*.
- ❖ **The infection can be cured with a single dose of antibiotics.**
- ❖ **Ureaplasma urealyticum** may be responsible for large percentage of all cases of NGU.

Syphilis:

It is chronic systemic disease caused by (*Treponema pallidum*) which is spirochete bacterium can transfer to fetus causing congenital syphilis, it can be classified into two types: Acquired & congenital syphilis.

Acquired syphilis Primary Syphilis:



Characterized by a cutaneous ulcer, is acquired by direct contact with an infectious lesion of the skin or the moist surface of the mouth, anus or vagina.

From 10 – 90 days (average 21 days) after exposure a primary lesion, the chancre develops at the site of initial contact.

The chancre are single, indurated, painless & non tender, well-defined margin & the base cover by yellowish or grey crust.

This sign help to differentiate syphilitic & herpetic ulcer.

Secondary Syphilis:

The clinical signs of the secondary stage begin approximately 6 weeks (2 weeks – 6 months) after the appearance of the chancre.



It is characterized by:

- mucocutaneous lesions,
 - skin rash in palms and soles,
 - a flu – like syndrome,
 - generalized adenopathy.
 - Patients may be acutely ill.
- Asymptomatic dissemination of T. Palladium to all organs occurs as the chancre heals.

Latent

✚ Latent syphilis is defined as having serologic proof of infection without symptoms of disease.

It is further described as either :

✚ **early** (less than 1 year after secondary syphilis) , may have a **relapse of symptoms**

✚ **late** (more than 1 year after secondary syphilis)

✚ Late latent syphilis is **asymptomatic**, and **not as contagious as early latent syphilis**.

Tertiary Syphilis:

- A small number of **untreated or inadequately** treated patients will develop **systemic disease**.
- Tertiary syphilis may occur approximately **3 to 15 years after** the initial infection ,
- People with tertiary syphilis are **not infectious**.

Including :

- **cardiovascular disease**, occurs 10–30 years after the initial infection. The most common complication is syphilitic aortitis, which may result in aneurysm formation.
- **central nervous system**, neurosyphilis, syphilitic meningitis
- **gummatous syphilis**, **systemic granulomas**. This stage is characterized by the formation of chronic **gummas**, which are soft, **tumor-like balls of inflammation** which may vary considerably in size. They typically affect the **skin, bone, and liver**, but can occur anywhere

Neurosyphilis Syphilis

Usually occurs during **late syphilis** but can occur **at anytime** during the infection.

Symptoms:

- Difficulty coordinating muscle movements
- Paralysis (not able to move certain parts of your body)
- Numbness
- Blindness
- Dementia (mental disorder)
- Damage to internal organs
- Can result in death

More likely to occur early in the disease process if **HIV infection** is also present.

Congenital

❑ Congenital syphilis may occur during pregnancy or during birth.

❑ Two-thirds of syphilitic infants are born without symptoms.

❑ Common symptoms that then develop over the first couple years of life include:

- hepatosplenomegaly
- rash
- fever
- neurosyphilis ,and
- pneumonitis .

If untreated, late congenital syphilis may occur in 40%, including: saddle nose deformation, saber shin.

40% will be stillborn or die in the hospital.

Transmission can occur during **any stage** of syphilis and **during any trimester** of pregnancy.

Can cause:

- Prematurity
- Birth defects
- Hutchinson's teeth
- Osteochondritis
- Developmental delays

- **Full treatment regimen must be completed <30 days prior to delivery for baby to be treated**
- **Defects not always reversible**
- **Osteochondritis: bone and joint separate and lose blood flow**
 - Long Bone Disease, Saber Shin, Saddle Nose



