



GENITOURINARY SYSTEM

SUBJECT : Community medicine

LEC NO. : One

DONE BY : Batool ALzubaidi

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Sexually Transmitted Diseases

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Associate Professor Dr Eman Al-Kamil

**Community Medicine
Hashemite University**

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 , and sometimes it cause
 - in babies born to an infected mothers. fatality in some of diseases.
 - 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**.
 - most of these diseases they are underestimated and sometimes even the numbers which we have, they are they do not reflect the actual incidence or prevalence because of this reason

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

Developed & developing countries →

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.

Especially in developed →

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).

• some infected people, they have the infection they have the microorganism and they can transmit

this microorganism to their partner without knowing that they have the infection

4. When diagnosed and treated early, many STDs can be treated effectively.

→ may be because of improper treatment some individuals they do not consult docto but they consult the pharmacy

and take improper antibiotic for this infection and this will cause the resistant to drugs or to antibiotics.

• Some infections have become resistant to the drugs, → Fatal chronic infections

• 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.

↳ Because they have the same risk factors

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.**

↳ They can transmit the infection to others

↳ This increases the risks of having complications

* Infection → severe infection → chronic infection

• 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**).

↳ Transmitted during the passage of baby in birth canal

* a term called TORCH (toxoplasmosis, rubella, cytomegalovirus, herpes simplex, syphilis, AIDS) » can be transmitted from mother to child

• 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**).

↳ Transplacental infection

↳ Severe conjunctivitis caused by gonorrhea which can head to blindness

Global incidence **Highly prevalent and incident infection*

- 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**

↳ Commonest types of sexually transmitted infections


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

** This is because of low social class or the increase in the risk because of the promiscuous sexual relationship and this will lead to a high incidence and prevalence in general*

- 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.

 The infection is transmitted from one person to another especially if they didn't use local protection to prevent the transmission of the infection and among those people who have multiple partners.

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;

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Viruses: Human Immune insufficiency Virus (**HIV**), Herpes Simplex Virus(**HSV**), Hepatitis B virus (**HBV**), Human Papilloma Virus (**HPV**).

Chlamydia: Chlamydia trachomatis, non gonococcal urthritis, lymphgranuloma venereum.

Mycoplasma: ureaplasma urealyticum, NGU

Bacterial: Neisseria gonorrhoea (GC), Haemophilis ducry (chancroid), Calymmatobacterium Granulomatis(granuloma inguinali),

Spirochetes: Tryponema palladium (syphilis).

Fungi: Candida albicans (candidiasis).

Protozoal: Trichomonous vaginalis, Lice (pediculosis pubis), Scabies
9(mite scabietic scabies).

Reservoir:

The reservoir **is exclusively human**; includes

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

 By direct contact

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.
 - ✳ So it is very important to early diagnose and treat gonorrhoea with a proper antibiotic
- 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

. Men—urethritis, epididymitis

. Women—cervicitis, salpingitis

. Men and women—proctitis, pharyngitis

. 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: → Caused by oral sex

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:

Low grade fever

→ infected red, painful and tense and hot.

Migratory polyarthralgia , septic arthritis & Tenosynovitis

Petechial/pustular skin rashes.

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**.

✦ first the hygiene cleaning the eyes frequently

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







Thank You