



Sexually Transmitted Diseases

L 1

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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 :

- ① ■ important cause of morbidity in adults ,
- ② ■ in infants born to an infected mothers.
- ③ ■ In some areas they are the commonest cause of **infertility in women, they can also cause infertility in men.** *especially gonorrhoea infection*

✚ 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 .

بقرود استحي عيب .

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**.
Sexually active persons ← (<25 years old)
2. The **incidence of STD's is rising**, **young people have become sexually active earlier** , have **multiple sex partners**. *(unprotected sex contact)*
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**. *(treatable disease, and it is curable)*
 - 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).

↳ it is fetal for women

• 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).

↳ gonorrhoea.

Epidemiology of sexually – transmitted diseases:

■ STDs remain one of the major public health problem .

■ the incidence of most STDs is increasing,

■ the bacteria which cause some common STDs have become resistant to many of the common antibiotics. , *so it difficult to treat*

Why STDs are high public health problem?

❑ STD is critical infection and is rapidly spreading.

❑ May associated with HIV.

❑ 10% of consultations are for one or other (STD).

❑ Many men and women treat themselves or seek alternative treatment which are incorrect, incomplete, and ineffective.

❑ There is a stigma attached to STDs, and people may fear to tell their sexual partners that they need treatment too.

Global incidence

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

■ Each year, there are an estimated 376 million new infections, with 1 of 4 **STIs**: chlamydia ⁽¹⁾, gonorrhea ⁽²⁾, syphilis ⁽³⁾ and trichomoniasis ⁽⁴⁾

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

■ Infection rates can vary enormously between countries in the same region and between urban and rural populations .

■ 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**.

العلاقات غير الشرعية.

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

العلاقات غير الشرعية قبل الزواج.

الزنا بعد النكاح.

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 lorry 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:** *most common one* Neisseria gonorrhoea (GC), Haemophilis ducry (chancoroid), Calymmatobacterium Granulomatis(granuloma inguinali),
- 5. Spirochetes:** Tryponema palladium (syphilis).
- 6. Fungi:** Candida albicans (candidiasis) → *very common problem can be easily treated*
- 7. Protozoal:** Trichomonous vaginalis, Lice (pediculosis pubis), Scabies (mite sicrobtic scabies).

Reservoir:

" HUMAN IS THE ONLY RESERVOIR "

The reservoir is exclusively human; includes

1. Untreated sick patients

2. Inapparent infection, especially in women. (*have the infection, but they asymptomatic and can transmit the infection*)
asymptomatic

Transmission:

1. 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 or the like.
- 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
(short)

Urethritis

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

Cervicitis

- 30-50% of women may be asymptomatic
- Symptoms—discharge, ^{*Purulent*} 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)

- 2% of all recognized cases of gonorrhoea disseminate from any of the previously described primary sites, more likely from the pharynx, and much more common in women. It include :
 1. Low grade fever *acute infection of joint*
 2. Migratory polyarthralgia involving the large joints; septic arthritis:
 - Increased pain and swelling
 - Purulent synovial fluids *دلائم رح ينتقل من مفصل إلى آخر*
 - Joint destruction
 - Tenosynovitis

3. Skin rashes

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.

*1) *washing the eye frequently every 5 min*

Routine prophylaxis ²⁾ 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. *most common cause*
- ❖ The infection can be cured with a single dose of antibiotics.
- ❖ **Ureaplasma urealyticum** *another cause* 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.

مرحلة

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.

its characteristic !!

The chancre are ^① single, ^② indurated, ^③ painless & ^④ non tender, well ^⑤ defined margin & the base cover by yellowish or grey crust. ^⑥

This sign help to differentiate syphilitic & herpetic ulcer.

2 Secondary Syphilis:

Is characterized by:

- ① mucocutaneous lesions,
- ② skin rash in palms and soles, *mainly on*
- ③ a flu – like syndrome,
- ④ generalized adenopathy.
- ⑤ Patients may be acutely ill.



➤ Asymptomatic dissemination of T. Palladium to all organs occurs as the chancre heals.

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

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)

→ not contagious.

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

↓
contagious

Tertiary Syphilis: ⁴

- 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

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:

- 1 ■ hepatosplenomegaly
- 2 ■ rash
- 3 ■ fever
- 4 ■ neurosyphilis ,and
- 5 ■ pneumonitis .

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



Congenital Syphilis



"saddle nose"
PHILIP J. DAVIS, MD, PhD, CDC
November 2007



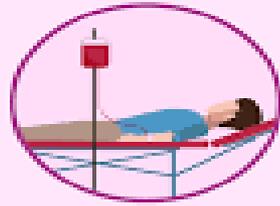
Hutchinsonian's teeth

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Unprotected
intercourse



Blood
transfusion



Needle
reuse



Pregnancy



Sexually Transmitted Diseases

L2

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Chlamydia very common STI

- Four million new cases occur each year
- **SYMPTOMS:** fever, weight loss for no reason, swollen glands, fatigue, diarrhea, white spots on the mouth.

❖ FEMALE SYMPTOMS:

- ① - **Vaginal discharge** (white or grey) or **burning** with urination
- ② - Lower abdominal pain
- ③ - Bleeding between menstrual periods.
- ④ - Low-grade fever (later symptom)

❖ MALE SYMPTOMS:

- ① - **Discharge** from the penis and/or burning when urinating.
- ② - Burning and itching around the opening of the penis.
- ③ - Pain and swelling in the testicles.
- ④ - Low -grade fever (associated with epididymitis -inflammation of the testicles)

Genital herpes simplex:

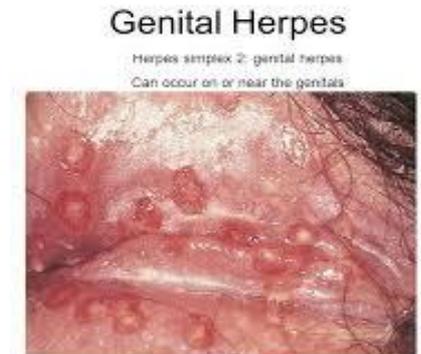
- ▶ Herpes simplex infection of the penis , vulva, and rectum is pathophysiologically identical to herpes infection in other areas.
- ▶ Genital herpes is primarily a disease of young adults.
- ▶ Both antigenic types 1 & 2 infect the genital area.
- ▶ Some people with herpes [never develop sores but] are still contagious and may spread it to others without knowing.
- ▶ The virus can be cultured for approximately 5 days from active genital lesions and the lesions are almost certainly infectious during this time.



3



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▶ Virus infections spread easily over moist surfaces.

▶ Wide areas of the **female** genitalia may be covered **with painful erosions**. Inflammation, edema, **and pain** may be so extreme that **urination is interfered** with.

▶ **Males** develop a similar pattern of extensive involvement with **edema and possible urinary retention, especially if uncircumcised**.

▶ **HSV1 is more common than HSV2** with rates of both increasing as people age



- The herpes virus is spread through skin-to-skin contact. It is most easily spread when blisters or sores are present.
- Some people with herpes never develop symptoms or blisters but can still shed the virus. This means that they can spread HSV to others without knowing it. Up to 70% of herpes is spread this way.
- Most cases **subclinical**.
- Transmission primarily from **subclinical infection**.
- **There is no cure for herpes.** (recurrent infection)

There is **no cure**, but treatment options for genital herpes can include:

- Letting the blisters or sores heal on their own.
- Antiviral treatment, acyclovir tablet and topical.

- **Complications:** neonatal transmission, enhanced HIV

Pregnancy

■ The risk of transmission from mother to baby is highest if the mother becomes infected at **around the time of delivery**, since **insufficient time will have occurred for the generation and transfer of protective maternal antibodies** before the birth of the child.

■ To prevent neonatal infections, seronegative women are recommended to avoid unprotected sexual contact with an HSV-1 seropositive partner and conventional sex with a partner having a genital infection during the last trimester of pregnancy.

■ Mothers infected with HSV are advised to avoid procedures that would cause trauma to the infant during birth (e.g. fetal scalp electrodes, forceps, and vacuum extractors) and, should lesions be present, to elect caesarean section to reduce exposure of the child to infected secretions in the birth canal. (10/20)

■ The use of antiviral treatments, such as acyclovir, given from the 36th week of pregnancy, limits HSV recurrence and shedding during childbirth, thereby reducing the need for caesarean section. (1) (2) (3)

■ Acyclovir is the recommended antiviral for herpes suppressive therapy during the last months of pregnancy.

Human Papillomavirus (HPV)

- Very contagious virus.
- Some people never get symptoms.
- HPV is spread through skin-to-skin contact , oral, anal and vaginal sex with an infected partner.
- A person can be infected and pass on the virus without knowing it.
- Some types cause genital warts.



- Usually, the warts look like tiny cauliflowers, but sometimes they are flat.
- The warts may cause itching, burning and some pain, but often don't cause any pain at all.
- Warts may be inside the vagina or on the cervix, or in the rectum or throat, so you might not notice them.
- They might also be so small that you cannot see them.
- Others can – in a minority of cases – lead ^(rare) to cancers of the cervix, vulva, vagina, penis, oropharynx and anus after 10–15 years.
- In addition, HPV 16 and 18 infections are strongly associated with an increased risk of developing oropharyngeal (throat) cancer.
Not only the cervical cancer... also

→ there are two ways to control the infection
① frequent screening ② vaccination.

→ especially in sexually active women

➤ In more developed countries, **cervical screening** using a **Papanicolaou (Pap) test** or **cytology** is used to detect abnormal cells that may develop into cancer.

➤ If abnormal cells are found, women are invited to have a colposcopy, biopsies can be taken, abnormal areas can be removed with a cauterizing loop or, by freezing (cryotherapy).

➤ **Treating abnormal cells can prevent cervical cancer.**

➤ HPV vaccines prevent infection with HPV & cervical cancer reduced.

➤ There is no cure for HPV. [but there is a vaccine]

➤ **There is a vaccine to prevent HPV available.**

➤ **Guideline for screening for HPV .**

Candidiasis – Yeast Fungus

(very common, but it is not harmful)

- Yeast fungus that may or may not be transmitted by sexual intercourse.
- Caused by high doses of antibiotics. It is usually caused by altering the Ph of the vagina.

SYMPTOMS:

1. A thick cheesy vaginal discharge
2. Severe itching, *burning*.

Parasitic infections

1. Pubic Lice (pediculosis)
2. Trichomoniasis
3. Scabies

Pubic Lice

- Pubic lice are called “crabs” because they look like crabs.
- Crabs are frequently the color and size of small freckles. These very small lice (crabs) usually attack the sexual (pubic) areas of the body.
- Found under arms, eyelashes, moustaches.
- Spread through direct physical contact. Close body contact with an infected person.
- SYMPTOMS: ^①A terrible, ^②persisting itch in the genital, rectal (sexual) area.
- It is associated with low hygiene.
- Common among low hygiene and overcrowding, i.e., prisoners.
- Hygiene, shampoo, lice comb.



(treatable)
→ curable ←



Trichomoniasis

- An estimated 5 million new cases occur each year in women and men.
- Occurs in vagina of women so may be sexually transmitted to men using infected washcloths and towels.
- It is transmitted to the baby during delivery.
- It also can occur in the urethra (carries urine to penis) in men, doesn't have symptoms usually.

SYMPTOMS:

- Appear within 5 to 28 days of exposure.
- Women usually have a vaginal discharge.

FEMALE SYMPTOMS:

- Itching and burning at the outside of the opening of the vagina and vulva.
- Painful and frequent urination
- Heavy, unpleasant smelling greenish, yellow discharge

MALE SYMPTOMS:

Usually nothing, or discomfort in urethra, inflamed head of the penis.

Scabies

- Caused by the itch mite *Sarcoptes scabiei*.
- It burrows just under the skin and lays eggs.
- The scabies mite can live for 2-4 days away from the human body; it can be transmitted without sexual contact.
- they can usually be eliminated effectively.
- Treatment often consists of medications that kill scabies mites and their eggs.
(Ivermectin) > ⚡
- Since scabies is so contagious, doctors will usually recommend treatment for an entire group of people who are in frequent contact with a person who has scabies.
- Common among low hygiene and overcrowding, i.e., prisoners. السجناء



Strategies for control of STDs:

The general guidelines for the control of sexually transmitted diseases include action at the level of agent, transmission, and host.^①^②^③

A. Infective agent

Eliminate the reservoir of infection

① Identification and treatment of the promiscuous female pool is of great importance.

② Regular medical examination and treatment of known commercial sex workers, inhabitants of brothels, and other places where promiscuous sexual behavior is known to occur.

For the control of HIV / AIDS, **voluntary counseling** and **testing** is used as a mean of identifying infected persons who may be guided on how to prevent them from infecting others, and they may be offered available antiretroviral chemotherapy.

B. Transmission

I. Discourage sexual promiscuity

Through sex education, make the community aware of the dangers of sexual promiscuity.

• Encourage stable family life.

• prostitution should be totally abolished, if necessary, by imposing sever penalties.

II. Local protection:

1. The use of the **male condom** diminishes, but does not eliminate, the risk of infection.
2. **Female condoms** have also been recently introduced diminish the risk of acquiring sexually transmitted diseases.
3. **careful hygiene** of the genitals with soap and antiseptic creams immediately after sexual exposure may give partial protection.

C. Host

I. Early diagnosis and treatment

1. Patients

Facilities for the diagnosis and treatment of those diseases must be freely accessible to all infected persons.

If there is no facility for the diagnosis of the STD, they should apply syndrome management.

2. Contacts *follow all contact*

- If detecting a case, all contact should be investigated & treated to prevent transmission of infection, this is called contact tracing, contact act as a source of the infection, & early detection & treatment is important.
- In highly promiscuous groups, where sexual activities occur in association with the use of alcohol or drugs, one may use the technique of ‘cluster tracing’.
- Apart from seeking a list of sexual exposure with dates, the patient is asked to name friends of sexes whom he feels may profit from investigation for sexually transmitted diseases.

II. Specific prophylaxis

- ① • **Specific immunization** is not available against sexually transmitted diseases except for genital herpes simplex, venereal wart, HPV & HBV.
- ② • **Chemoprophylaxis**: using **antibiotics**, this approach can be **dangerous** for the individual and the community.
→ *this is not preferable?! why ↴*
 1. Chemoprophylaxis may suppress the acute clinical manifestations, but the disease may remain latent and progress silently to late complications.
 2. The widespread use of a particular antibiotic may encourage the emergence and dissemination of drug resistance strains.

Syndrome management:

* وضع للدول التي ما عندها اماكن لتخصيص infection

It is one strategy recommended by WHO to deal with patient where have no facilities, specially in developing countries as a syndrome & not as etiological classification.

[according to presentation]

For example, male patient came with urethral discharge & you are doctor in a village, or army with no facilities. **Use the following steps:**

1. Management of the (STDs) as syndrome & not as etiological classification.
2. Using **flow charts** which enable the practitioner to diagnose, treat, & educate with respect to (STDs).
3. It is **effective, efficient, accessible** & can use by even family, physician, & general practitioner.
4. Drug usually used to cover these diagnosis which is as group of that syndrome i.e. (cover all possible cause of that syndrome)

Types of syndrome:

1. Urethral discharge for male & female.
2. Genital ulcer.
3. Vaginal discharge.
4. Ophthalmia neonatorum.
5. Acute inguinal lymphadenitis.
6. Scrotal swelling.
7. Lower abdominal pain.

Why have we used syndrome management for patient consulting primary health care ?

1. Simple not need well trained.
2. Do not need invasive investigation.
3. Do not need specialist STDs doctor.
4. Can be done by nurses, medical profession.
5. Drug available & simply use.

Examples on syndrome management:

•Male with genital discharge:

1. **Physiological**: crystal, urine, or sexual stimulation.
2. **Pathological**: balanitis, anterior urethritis, secondary to proctitis, or upper UTI. **The commonest is anterior Urethritis, either due to :**
 - A. gonorrhoea.
 - B. Non -specific infection.
 - C. Trichomonas vaginalis.
 - D. Herpes simplex viruses.
 - E. Secondary to intraurethral infection.

- **Female with vaginal discharge:**

- **Physiological:** pregnancy, menstrual variation, or sexual stimulation.

- **Pathological:**

- vulvitis.

- 1. ant. Urethritis:

- A. gonorrhoea.

- B. non -specific infection.

- C. trichomonas vaginalis.

- D. secondary to intraurethral infection.

- E. secondary to UTI.

- vagina:

- A. candidiasis,

- B. trichomonas vaginalis.

- C. foreign body.

²²
cervix: - cervicitis.

Etiology of genital ulcer:

1. Infection: *chancere.*

- syphilis (rare) but can be transmitted to fetus & can lead to systemic infection (CVS, & neurosyphilis).
- herpes ,lymphogranuloma venerium, chancroids, granuloma inguinali & pyogenic granuloma.

2. Trauma: self infected.

3. Neoplasm: CA.

4. Allergic: fixed drug eruption either due to tetracycline or metheprim.

5. Parasitic infestation: scabies & pediculosis. *(from itching)*

6. Unknown: Behcet Disease.

What is the only 100 % effective way of preventing STIs ?

①. Abstinence

Sexual abstinence means to abstain from different levels of sexual activity.

- ②. Delay sexual activity until older age:

- Religious beliefs

- Family and personal values

③. use protective barriers (condoms) .

④. Sexual education.

5. HPV vaccine * في بعض الدول يعطوا