Sexually Transmitted Diseases

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Sexually – transmitted diseases (STDs) are an important cause of morbidity in adults and in infants born to infected mothers. In some areas they are the commonest cause of infertility in women, they can also cause infertility in men.

What is meant by sexually – transmitted diseases ?

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.**

Although, sometimes the terms sexually – transmitted infections(**STIs**) and (**STDs**) are used interchangeable. This can be confusing and not always accurate. So it is important to know the difference between infection and disease.

Epidemiology of sexually – transmitted diseases:

(STDs) remain one of the major public health problem and the incidence of the most (STDs) is increasing, and the bacteria which cause some common (STDs) have become resistant to many of the common antibiotics.

Why (STDs) are high public health problem?

1. (STD) is critical infection.
2. (STD) is rapidly spreading.
3. Need more surveillance.
4. More money.
5. May associated with HIV.

*(STDs) high in black people than white people and high in low socioeconomic state.

- In many health services, about 10% of consultations are for one or other (STD).

- Many more men and women treat themselves, or seek alternative treatment, but this alternative treatments are often incorrect, incomplete, and ineffective.

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

Factors which leads to increase (STDs):

1. Asymptomatic patient, usually women, and homosexual persons.
2. Personal freedom.
3. Multiple partners.
4. Modern treatment, because the treatment cheep and easy, so no fear from disease.
5. Contraceptive pills, so no fear from pregnancy.
6. People movement (migration).
7. Alcohol consumption.
8. prostitute.
9. Ignorance, failure to recognize the signs and symptoms by patient.

Changing patterns of sexual behavior:

The pattern of sexual behavior is undergoing major changes in developing countries:
1.They evolve from rural traditional societies to modern urban industrial communities.
2.There is great mobility from community to community.
3.Easier communication through books, the cinema, television and the internet.
The overall effect of these changes is to challenge and destabilize traditional values, and customs, especially with regard to sexual behavior.

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 lorry drivers, migrant laborers, etc.)

- Normal sex between male and female called **Heterosexual** or **Bisexual** while **Homosexual** in which sexual contact occur in same sex, either female homosexual or male homosexual, and this make a major problem in the community.

Causes of sexual transmitted diseases:

Many agents cause these diseases, more than 20 organisms;

1. **Viruses:** HIV, HSV, HBV, HPV.
2. **Chlamidia:** chlamydia trachomatis, non gonococcal urthritis, lymphgranuloma venereum.
3. **Mycoplasma:** neuplasma urealuticum, NGU.
4. **Bacterial:** Neisseria gonorrhia (GC), Haemophilis ducry (chancoroid), calamnyto bacterium (granuloma inguinali), shigella.
5. **Spirochite:** Tryponema pallidum (syphilis).
6. **Fungi:** Candida albicanse (candidiasis).
7. **Protozoal:** Trichomonous vaginalis, Ameobiasis, Gardia, Entrobios vaginalis (Helmanth), Lice (pediclosis pubis), Scabies (mite sicobtic scabies).

Reservoir:

The reservoir is exclusively human; includes

1. Untreated sick patients
2. In apparent 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,

A. Mother to children, transmission of HIV infection, syphilis, and gonococcal ophthalmia neonatorum, or

B. Accidental contact as when doctors, dentists, or midwives handle tissues infected with syphilis.

C. Blood and blood products, e.g. HIV infection.

D. Rarely fomites, e.g. soiled moist clothing such as wet towels, may transmit vulvo-vaginitis to pre-pubescent girls.

Gonorrhea:

Gonorrhea is a common sexually transmitted disease. 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.

Genital infection in male:

After a 3 – 5 days incubation period, most infected men have sudden onset of burning, frequent urination, and a yellow, thick, purulent urethral discharge. Some men do not develop symptoms for 5 – 14 days and then complain only of mild dysuria with a mucoid urethral discharge. Some men, 5 - 50 %, never develop symptoms and become carriers for months, acting, as do a symptomatic women, as major contributors to the ongoing gonorrhea epidemic.

Genital infection in female:

Female genital gonorrhea has traditionally been described as an asymptomatic disease, but symptoms of urethritis and endocervicitis may be elicited from 40 - 60% of the women.

Urethritis begins with urinary frequency and dysuria after a 3 – 5 days incubation.

Endocervical infection may present with a non specific pale yellow vaginal discharge. The cervix may appear normal or it may show marked inflammatory changes with cervical erosions.

Rectal gonorrhea:

Rectal gonorrhea is acquired by rectal intercourse. Women with genital gonorrhea may also acquire rectal gonorrhea from contamination of the anorectal mucosa by infections vaginal discharge. A history of rectal intercourse is the most important clue to the diagnosis, since the symptoms and signs of rectal gonorrhea are relatively nonspecific.

Gonococcal pharyngitis:

Gonococcal pharyngitis is acquired by penile – oral exposure. The majority of 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 sever pharyngitis with diffuse erythema and exudates.

Disseminated gonococcal infection:
(arthritis – dermatitis syndrome)

Two percent of all recognized cases of gonorrhea disseminate from any of the previously described primary sites, more likely from the pharynx, and much more common in women.

Diagnosis of gonorrhea:

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

Treatment:

- tetracycline hydrochloride, 500 mg by mouth 4 times a day for 7 days.
- Or amoxilline 3 gm with 1 gm probenced by mouth.

Nongonococcal Urethritis (NGU):

Nongonococcal Urethritis (nonspecific urethritis) and cervicitis are the most common sexual transmitted diseases in the United states. The diagnosis, as the name implies, is one of exclusion.

The obligate intracellular bacteria **Chlamydia trachomatis** causes 40% - 50% of all cases of NGU. **Ureaplasma urealyticum** may be responsible for large percentage of all cases of NGU.

Syphilis:

Is chronic systemic disease caused by (**Treponema pallidum**) which is spirochetal organism can transfer to fetus causing congenital syphilis, so it can be classified into two types: Acquired & congenital 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:

Is characterized by mucocutaneos lesions, a flu – like syndrome, and generalized adenopathy. Patients may be acutely ill.
Asymptomatic dissemination of T. Pallidum 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.

Tertiary Syphilis:

A small number of untreated or inadequately treated patients will develop systemic disease, including cardiovascular disease, central nervous system, and systemic granulomas.

Syphilis serology:

Two classes of antibodies are produced in response to infection with T. Pallidum; these are non – specific antibodies measured by the Venereal Disease Research

Laboratory (VDRL) and rapid plasma reagin (RPR) tests and specific antibodies measured by the fluorescent treponemal antibody absorption.

Treatment:

- Benzathine penicillin G: 2400000 units IM immediately, to be repeated in 7 days.
- If patient sensitive to penicillin, tetracycline: 500 mg orally 4 times daily for 12 days.

Lymphogranuloma venereum :

LGV is caused by several related strains of Chlamydia trachomatis. after an incubation period of 5 – 21 days, a small papule or vesicle occurs on the penis or cervix. The lesion evolves rapidly to a small painless erosion that heals without scarring.

Chancroid:

Chancroid is the most common of the minor venereal diseases. It caused by the short gram negative rod **Hemophilus ducreyi.** After an incubation period of 2 – 5 days, a red papule appears at the site of contact, rapidly becomes pustular, and then ulcerates. The ulcer (soft chancre), which bleeds easily, he has a red overhanging edge and a base covered by yellow – grey exudates.

Granuloma inguinale (donovanosis):

Is a chronic, superficial, ulcerating disease of the genital, inguinal, and perianal areas caused by the gram – negative rode **Calymmatobacterium Granulomatis.** The incubation period is unknown.

Genital herpes simplex:

Herpes simplex infection of the penis (**herpes progenitalis**), 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. The virus can be cultured for approximately 5 days from active genital lesions and the lesions are almost certainly infectious during this time.
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..

Strategies for control of STDs:

The main **objectives** of STD control are:

1. To interrupt the transmission of STD infection in order to reduce the incidence.

2. To decrease the duration of infection in order to reduce the prevalence, thereby to prevent the development of diseases and complication.

3. To reduce the risk of HIV infection.

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

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 means 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.

1. One objective would be influence young persons before their sexual habits became established.

2. Encourage stable family life

There are conflicting views about the best way to deal with the problem of prostitution in relation to sexually transmitted disease. At the one extreme it suggested that prostitution is a social evil that should be totally abolished, if necessary, by imposing sever penalties. An alternative view holds that whilst it may be desirable to abolish prostitution, it is not feasible to do so.

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 and may similarly diminish the risk of acquiring sexually transmitted diseases.
3. It has also been suggested that careful toilet 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

If detecting the case, all contact should be investigated & treated to prevent transmission of infection, this is called **contact tracing**.

1. Those should be educated & informed that the infection not pass to them.
2. They could be the source of the infection.
3. Early detection & treatment.

In highly promiscuous groups where sexual activities occur in association with the use of alcohol or drugs, the details of the chain of transmission may be difficult to unravel. In such cases, 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

- Specific immunization is not Available against sexually transmitted diseases except for genital herpes simplex, venereal wart, & HBV.

- Chemoprophylaxis: through the use of antibiotics, this approach can be dangerous for the individual and the community.
  a. Chemoprophylaxis may suppress the acute clinical manifestations but the disease may remain latent and progress silently to late complications.
  b. The widespread use of a particular antibiotic in sub curative doses may encourage the emergence and dissemination of drug resistance strains.

b. Syndrome management:

It one strategy recommended by WHO to deal with patient where have no facilities, specially in developing countries as a syndrome & not as etiological classification. For example male patient came with urethral discharge & you are doctor in a village, or army with no facilities. **Using 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 neonatorm.
5. Acute inguinal lymphadenitis.
6. Scrotal swelling.
7. Lower abdominal pain.

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

- Simple not need well trained.
- Not need invasive investigation.
- Not need specialist STDs doctor.
- Can do by nurses, medical profession.
- Drug available & simply use.

Examples on syndrome management:

- **Male with genital discharge:**

1. Physiological: crystal, urine, or sexual stimulation.
2. Pathological: balanitis, ant. Urethritis, secondary to prostitis, or upper UTI. The commonest is ant. Urethritis, either due to :
    - gonorrhoea.
    - Non specific infection.
    - Trichomonous vaginalis.
    - Herpes simplex viruses.
    - Secondary to intraurethral infection.

- **Female with vaginal discharge:**

1. Physiological: pregnancy, menstrual variation, or sexual stimulation.
2. Pathological:
   - vulvitis.
     - ant. Urethritis:
     * gonorrhoea.
     * non specific infection.
     * trichomonous vaginalis.
     * secondary to intraurethral infection.
     * secondary to UTI.

     - vagina:
     * candidiasis,
     * trichomonous vaginalis.
     * forgin body.
     - cervix: - cervcitis.

Etiology of genital ulcer:

1. Infection: syphilis (rare) but can be transmitted to fetus & can leads to systemic infection (CVS, & neurosyphilis).
   Other infection like lymph granuloma venerium, chanchroid, herpis, granuloma inguinali & pyogenic granuloma.
2. Trauma: self infected.
3. Neoplasm: CA.
4. Allergic: fixed drug eruption either due to tetracycline or metheprim.
5. Parasitic infesitation: scabies & pediculosis.
6. Unknown: Behcet Disease.