Sexually Transmitted Infections: A Public Health Priority And Public Health Approaches

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INTRODUCTION AND EPIDEMIOLOGY

A sexually transmitted infection refers to a microbe acquired through sexual activity while a sexually transmitted disease/illness refers to symptomatic illness due to sexually acquired microbe.

Sexually transmitted infections are caused by microorganisms which are transmitted through sexual intercourse, which may be vaginal, anal, or oral. STIs are diseases of public health importance; therefore public health education and prevention are important strategies in their control.

Over 20 disease conditions are known to be sexually transmissible and several other serious complications including cancers can result from STIs.

According to 2005 WHO estimates, 448 million new cases of curable STIs (syphilis, gonorrhea, Chlamydia and trichomoniasis) occur annually throughout the world in adults aged 15-49 years. This does not include HIV and other STIs which continue to adversely affect the lives of individuals and communities worldwide. In developing countries, STIs and their complications rank in the top five disease categories for which adults seek health care.

TRANSMISSION

STIs are infections that are spread primarily through person-to-person sexual contact. Several, in particular HIV and syphilis, can also be transmitted from mother to child during pregnancy and childbirth, and through blood products and tissue transfer. Syphilis can also be transmitted by accidental direct inoculation (needle accidents, tattoos)

STIs are caused by bacteria, viruses, fungi, protozoa and parasites.

Bacterial causes

- *Neisseria gonorrhoeae* (gonorrhoea or gonococcal infection)
- *Chlamydia trachomatis* (chlamydial infections)
- *Treponema pallidum* (syphilis)
- *Haemophilus ducreyi* (chancroid)
- *Klebsiella granulomatis,* previously known as Calymmatobacteriumgranulomatis (granuloma inguinale or donovanosis).

Viral causes

- Human immunodeficiency virus 1 and 2 (AIDS)
- Herpes simplex virus type 2 (genital herpes)
- Human papillomavirus (genital warts, certain subtypes lead to cervical cancer in women)
- Hepatitis B virus (hepatitis and chronic cases may lead to cancer of the liver)
- Cytomegalovirus (inflammation in a number of organs including the brain, the eye, and the bowel).

- Human T lymphotropic virus type 1
- Molluscum contagiosum virus

Protozoal causes

- *Trichomonas vaginalis* (vaginal trichomoniasis)

Fungal causes

- *Candida albicans* (vulvovaginitis in women; inflammation of the glans penis and foreskin [balano-posthitis] in men).

- **Infestations**
  - *Sarcoptes scabies* (causes genital scabies)
  - *Pediculosis pubis* (causes pubic lice)

HEALTH CONSEQUENCES OF STI

Untreated STIs have critical implications for reproductive, maternal and newborn health. STIs are the main preventable cause of infertility, particularly in women. 10 - 40% of women with untreated chlamydial infection develop symptomatic pelvic inflammatory disease and post-infection tubal damage is responsible for 30 - 40% of cases of female infertility. Furthermore, women who have had pelvic inflammatory disease are 6 - 10 times more likely to develop an ectopic (tubal) pregnancy than those who have not, and 40 - 50% of ectopic pregnancies can be attributed to previous pelvic inflammatory disease.

Infection with types 16 and 18 of human papilloma virus can lead to the development of genital cancers, particularly cervical cancer in women. In pregnant women with untreated early syphilis, 25% of pregnancies result in stillbirth and 14% in neonatal death – an overall perinatal mortality of about 40%. Up to 35% of pregnancies among women with untreated gonococcal infection result in spontaneous abortions and premature deliveries, and up to 10% in perinatal deaths. In the absence of prophylaxis, 30 - 50% of infants born to mothers with untreated gonorrhea and up to 30% of infants born to mothers with untreated chlamydial infection will develop a serious eye infection (ophthalmia neonatorum), which can lead to blindness if not treated early. Worldwide, 1000 - 4000 newborn babies become blind every year because of this condition. Other adverse sequel occurring in neonates as a result of STI include; still birth, low birth weight, pneumonia, neonatal sepsis, acute hepatitis, and congenital anomalies.

In men STIs lead to epididymitis, prostatitis, and infertility, and can also lead to development of genital cancers such as penile cancer, anal cancer, liver cancer, T-cell leukemia, and Kaposi's sarcoma.

SOCIAL CONSEQUENCES OF STI

Women in particular suffer from painful social consequences of untreated STI. The social stigma and personal damage due to infertility and pregnancy wastage result in marital disharmony, depression, and even divorce.

Also, sexually transmitted infections like HIV/AIDS may be a cause of exclusion from kinship networks at the household and community levels,rising number of orphan children on our continent, anddropping out of school to help support the family.

ECONOMIC CONSEQUENCES OF STI

STIs affect the most economically viable group of the population (those between 15-49 years); this leads to immense economic consequences. It has been estimated that 5 percent of the total discounted healthy life lost in sub-Saharan Africa is due to STIs, excluding HIV.

STIs reduce the productivity of men and women in the prime of their lives.For example, in urban areas of sub-SaharanAfrica syphilis causes loss of an estimated 9 productive days per capita per year for the entire urban population, and HIV infection leads to the loss of unquantifiable number of days; this leads to reduction in productivity or increase in workload of other workers.

There is increased government expenditure on medica lcare, insurance and hiring of extra labour to avoid reduced productivity. This increased cost weakens a country's tax base, and reduces its ability to finance public expenditures, including those aimed at accumulating human capital, such as education and health services.

CLINICAL FEATURES

The main clinical features of common STIs are listed below. There may be no symptom at all especially in the early stages of the infection; up to 70% of women and a significant proportion of men with gonococcal or Chlamydia infections experience no symptoms at all.

- urethral discharge
- vaginal discharge
- genital itching
- genital ulcers
- inguinal swellings (bubo, which is a swelling in the groin)
- scrotal swelling
- warty growths
- lower abdominal pain
- heavier menstrual flow
- neonatal eye infections (conjunctivitis of the newborn).

PUBLIC HEALTH APPROACHES

PREVENTION

Prevention is the key step in limiting the spread of STIs. The most effective means to avoid becoming infected with or transmitting a sexually transmitted infection is to abstain from sexual intercourse, or to have sexual intercourse only within a long-term, mutually monogamous relationship with an uninfected partner. Male latex condoms, when used consistently and correctly, are highly effective in reducing the transmission of HIV and other sexually transmitted infections.For other STIs vaccines can be used to prevent infection or delay the onset of complications e.g. HPV vaccine can prevent the occurrence of cervical cancers.

EARLY AND ADEQUATE TREATMENT

Patients who notice any of the clinical features of STIs or who have partners with any of these features should seek medical treatment as early as possible. Early and adequate treatment ensures complete eradication of the microbe and prevents spread to other sexual partners and other members of the community at large. Effective management is one of the cornerstones of STI control as it also prevents development of complications and sequelae.

The syndromic approach to STI management was developed to address issues of STI treatment in resource limited environment. It improves clinical diagnosis by avoiding wrong diagnoses and ineffective treatment, can be learned by primary health care workers, and allows treatment of symptomatic patients in one visit.

HEALTH EDUCATION

Health education is vital in the treatment and control of STIs. Individuals and the community at large should be well informed about STIs: their clinical features, opportunities for treatment and complications. Adequate knowledge of preventive strategies will go a long way in controlling the spread of STIs.

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