UNIT NO. 2

HIV INFECTION AND OTHER SEXUALLY TRANSMITTED INFECTIONS (STIs) IN WOMEN

Dr Fong Kah Leng

ABSTRACT

A variety of infectious microorganisms can be spread by sexual contact. Bacterial sexually transmitted infections (STIs) include syphilis, gonorrhea and chlamydia. Viral STIs include genital warts, genital herpes and HIV infection. A patient with one STI is likely to have another; screening for other infections is essential. The presence of STIs indicates an increased risk of transmission of HIV. The incidence of PID is strongly correlated with the prevalence of STIs. Delay of treatment of 3 or more days in gonorrhoea- or chlamydia-associated PID leads to a threefold increased risk of ectopic pregnancy or tubal infertility. Effective treatment must include contact tracing and treatment of sexual partners. The Ministry of Health has recently implemented the antenatal HIV testing of antenatal (pregnant) women using the opt-out approach by including HIV testing as part of the standard antenatal screening package. Pregnant women should be offered screening for HIV early in pregnancy because appropriate antenatal interventions can reduce maternal-to-child transmission of HIV infection. Women diagnosed HIV positive during pregnancy should be informed that interventions (such as anti-retroviral therapy, caesarean section and avoidance of breastfeeding) can reduce the risk of mother-to-child transmission from 25-30% to less than 2%. Long term sequelae of STIs include: infertility, ectopic pregnancy, lower genital tract neoplasia, adverse pregnancy outcomes, chronic pain, and death from HIV infection or sepsis of untreated or inadequately treated acute PID.

OVERVIEW

Sexually transmitted infections are those that are passed from person to person through sexual contact. Because sexual activity includes intimate contact, it provides an easy opportunity for organisms to spread from one person to another. A variety of infectious microorganisms can be spread by sexual contact. Bacterial sexually transmitted infections (STIs) include syphilis, gonorrhea and chlamydia. Viral STIs include genital warts, genital herpes and HIV infection.

Although STIs usually result from having vaginal, oral or anal sex with an infected partner, genital penetration is not necessary to spread an infection. Also the organisms responsible for some STIs (eg. HIV and hepatitis virus) can be transmitted through non-sexual means, such as from mother to child at birth or through breastfeeding or exposure to contaminated blood or needles. Presence of STIs indicates increased risk of HIV infection.

FONG KAH LENG, Associate Consultant, Singapore General Hospital

SYMPTOMATIC STIs – "THE VISIBLE STIs"

- Drips / Discharges
  Often caused by gonorrhea, chlamydia or trichomonas.
- Sores / Ulcers
  A sore may appear at the point of sexual contact, for example, on the genitalia, mouth or hands. Often caused by genital herpes or syphilis. Sores associated with syphilis, the primary chancre, are often painless and go away on their own, but the disease remains in the body. Herpes is a lifelong infection with recurrent outbreaks of painful blisters.
- Genital Warts
  Warts appear at the point of sexual contact. If untreated, they spread and can grow quite large, growing externally or internally in the vagina or rectum.
- Itching / Irritation in the genital area
  Often caused by trichomonas, gonorrhea, chlamydia or human papilloma virus.

Notification

In accordance with section 6 of the Infectious Diseases Act, gonorrhoea, syphilis (infectious, non-infectious and congenital), chancroid, genital herpes (first episode and recurrent) should be notified to the Department of STI Control clinic using form MD 131 or electronically.

Treatment

Effective drugs are available for most STIs caused by bacteria. Viral STIs, especially herpes and HIV, persist for life and have effective treatment but no known cure.

ASYMTOPMATIC STIs – "THE INVISIBLE STIs"

1. It is possible to have an STD and not know it. This includes HIV infection. Patients often do not know they are infected until they get very sick.
2. The symptoms of STDs can take a few days to several years to appear.

Types	Infection	Organism	Treatment
Bacterial	Chlamydia	Chlamydia trachomatis	• Azithomycin 1g stat PO • Doxycycline 200mg stat then 100mg for 6 days PO • Erythromycin 500mg bd 7 days PO
	Gonorrhoea	Neisseria gonorrhoea	• Ampicillin 2-4g + Probencid 1g • Ciprofloxacin 200mg
	Syphilis	Treponema pallidum	• Procaine Penicillin 900mg im 10-12 days
Viral	Hepatitis	Hepatitis A-G	• Symptomatic
	Herpes Simplex	Herpes virus hominis	• Acyclovir 200mg 5 hrly PO
	Human Immunodeficiency Virus (HIV)	HIV	• Anti-retroviral agents
	Genital Warts	Human papilloma virus (HPV)	• Podophyllin paint, imiquimod • Liquid nitrogen, laser, diathermy

HIV INFECTION

- In Singapore, from 1985 to Jun 2005, there are 225 females with HIV infection.
- Refer patients with HIV infections to the Infectious Disease Physician, Department of Infectious Diseases, CDC for further management.
- Infected women also experience HIV-associated gynaecologic problems, many of which occur in uninfected women but with less frequency or severity.
- Vaginal yeast infections, common and easily treated in most women, often are particularly persistent and difficult to treat in HIV infected women. These infections are considerably more frequent in HIV infected women. Other vaginal infections may occur more frequently and with greater severity in HIV infected women, including bacterial vaginosis and common STIs such as gonorrhea, chlamydia, and trichomoniasis.
- Pelvic inflammatory disease (PID) appears to be more common and more aggressive in HIV infected women than in uninfected women. PID may become a chronic and relapsing condition as a woman's immune system deteriorates.
- Fertility is not affected by HIV infection. Women with HIV infection, like other women, may wish to plan pregnancy, limit their family, or avoid pregnancy. Health professionals should enable these reproductive choices by counselling and appropriate contraception provision at the time of HIV diagnosis and during follow up.
- Condoms have a significant user and method failure rate. Dual protection, the simultaneous use of an effective contraception method with consistent condom use, is recommended for effective prevention of unplanned pregnancy and HIV sexual transmission. Women continuing to use condoms alone must be advised how to access emergency contraception.
- Oral, injectable, and implantable hormonal contraception methods and the intrauterine system are all suitable choices for HIV positive women without medical contraindications to their use – for example, hepatitis C related liver disease.
- Caution may be required in prescribing hormonal contraception for women taking enzyme inducing drugs including some HAART and anti-TB agents.
- For HIV positive women with more advanced disease, menorrhagia or irregular menstrual cycles, and current injecting drug users the Mirena (LNG-IUS) system and injectable progestogens could be recommended as they both reduce user dependency and menstrual loss.
- Male and female sterilisation should not be forgotten because both are effective "permanent" cost effective methods of contraception. Women should be given the opportunity during pregnancy to consider sterilisation at the time of their elective caesarean section delivery.

Notification

Notify the Department of Clinical Epidemiology, CDC, Tan Tock Seng Hospital (Form MD131 or electronically via Electronic Notification System - ENS).

HIV IN PREGNANCY

- The Ministry of Health has recently implemented the antenatal HIV testing of antenatal (pregnant) women using the opt-out approach by including HIV testing as part of the standard antenatal screening package.
- Pregnant women should be offered screening for HIV early in pregnancy because appropriate antenatal interventions can reduce maternal-to-child transmission of HIV infection.
- Women diagnosed HIV positive during pregnancy should be informed that interventions (such as anti-retroviral therapy, caesarean section and avoidance of breastfeeding)

can reduce the risk of mother-to-child transmission from 25-30% to less than 2%.

- All pregnant women who are HIV positive should be screened for genital infections during pregnancy. This should be done as early as possible in pregnancy and repeated at around 28 weeks. Any infection detected should be treated accordingly.
- All women who are HIV positive should be advised to take anti-retroviral therapy during pregnancy and at delivery.
- Women should be offered a planned caesarean section as it reduces the risk of mother-to-child transmission of HIV. From 1985 to Jun 2005, there are 25 cases of mother-to-child transmission in Singapore.
- Women should be advised not to breastfeed their babies.

LONG-TERM SEQUELAE OF STIs IN WOMEN

- Infertility
  This generally results from damage to the fallopian tubes from ascending infection by gonorrhea, chlamydia and other organisms causing pelvic inflammatory diseases.
- Ectopic Pregnancy
  This is linked in with tubal damage from prior pelvic inflammatory diseases. Ectopic pregnancy remains one of the primary causes of maternal mortality throughout the world.
- Lower genital tract neoplasia
  Several lines of evidence point to human papilloma virus infection as a causal factor in the development of lower genital tract neoplasia, most commonly cervical cancer but also vaginal and vulvar cancers. Warts are caused by the Human Papilloma Virus, a virus which has been linked to cervical cancers in women in 90% of the cases.
- Adverse pregnancy outcomes
  Adverse pregnancy outcomes linked to STIs include miscarriage or stillbirth, intrauterine growth retardation, prematurity and transmission of infection to the fetus or newborn. In the live foetus, these adverse pregnancy outcomes are associated with varying degrees of physical or mental compromise and increases in infant mortality. STIs can be passed from a pregnant woman to the baby before, during or after the baby's birth. Some STIs (eg syphilis) cross the placenta and infect the baby while it is in the uterus. Other STIs (eg gonorrhea, chlamydia, hepatitis B and genital herpes) can be transmitted from mother to baby during delivery as baby passes through the vagina. Gonorrhoea can cause neonatal ophthalmia. Chlamydia can cause neonatal conjunctivitis or pneumonia.
- Chronic pain
  Chronic pelvic and abdominal pain is a complication of approximately one fifth of women who have had pelvic inflammatory disease. It is associated with infertility and is thought to be related to intra-abdominal adhesive disease. Chlamydia causes perihepatitis, known as Fitz-Hugh-Curtis syndrome.
- Death
  In many urban areas in central Africa, AIDS has become the leading cause of death in young women of reproductive age. Death secondary to sepsis from untreated or inadequately treated acute PID still occur.

REFERENCES

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3. RCOG. Management of HIV in Pregnancy. Royal College of Obstetricians and Gynaecologists Guideline No. 39. April 2004.

LEARNING POINTS

- **A patient with one STI is likely to have another; screening for other infections is essential.**
- **STIs increase transmission of HIV.**
- **The incidence of PID is strongly correlated with the prevalence of STIs.**
- **Delay of treatment of 3 or more days in gonorrhoea- or chlamydia-associated PID leads to a threefold increased risk of ectopic pregnancy or tubal infertility.**
- **Effective treatment must include contact tracing and treatment of sexual partners.**