

# ***HIV infection in women & babies***

- a seminar and counselling workshop for nurses

The Proceedings

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**Proceedings of**  
***HIV infection in women and babies***  
**- a seminar and counselling workshop for nurses**  
(13 September 1995, organised by AIDS Unit of  
the Department of Health)

**Objectives**

1. To update on medical and nursing management of HIV infected women
2. To enrich the knowledge on paediatric HIV infection
3. To prepare the nurses for providing counselling on HIV-related issues for women

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*AIDS Unit, Department of Health, Hong Kong. 5/F, Yaumatei Jockey Club Clinic, 145, Battery Street, Kowloon, Hong Kong. Tel: (852) 2780 8622. Fax: (852) 2780 9580. E-mail: microaid@hkucc.hku.hk*



# HIV Infection & AIDS - the basics

Dr Choi Man Yan, Teresa

Medical & Health Officer, Special Preventive Programme, Department of Health

## Virology & Immunology

Human immunodeficiency virus (HIV) is a retrovirus that infects a variety of human cells, notably the CD4 (T helper) lymphocyte. Upon entry into the cells, reverse transcriptase of the virus allows the reproduction of a segment of DNA from the viral RNA. The DNA segment is then inserted into human genome and viral replication occurs simultaneously with that of host. This results in destruction and depletion of CD4 cells. As CD4 cell is the central coordinator of the immune defense mechanism, its loss results in progressive immune deficiency and dysfunction.

## Transmission of HIV

HIV is found in large concentration in blood, vaginal and seminal fluids and other deep body fluid like CSF and joint fluids. Transmission of infection most commonly occurs through sexual contact and sharing of injecting equipment among illicit drug users. Reception of infected blood or blood products had been an important route before 1985 but has become less common when screening of donated blood started. However, it may still occur in some places where universal screening of blood or blood products are not performed. HIV positive pregnant women may transmit the virus to their neonates during the antenatal stage, delivery and breastfeeding in 15-40% and can be reduced by aggressive AZT treatment and withholding breastfeeding. Needle stick injury by a HIV-contaminated needle carries a 0.4% risk of transmission.

## Natural history of HIV infection

After the acute infection (which may or may not be associated with a seroconversion illness),

the person enters the chronic phase of infection of variable duration. He/she will remain symptom-free during the incubation period which usually lasts for several years or more. However, the immune function as reflected by the CD4 level usually drops gradually or precipitously even during this period. By the end of ten years, 50% of HIV-infected persons will have progressed to AIDS. AIDS means the presence of HIV infection plus an AIDS-defining illness.

The US Centers for Disease Control & Prevention (CDC) has revised the classification system and AIDS surveillance definition in 1993. Hong Kong has in principle adopted the new system, with minor modifications in view of local specific needs. The AIDS-defining diseases are most commonly opportunistic infections, followed by malignancies and conditions directly caused by HIV. Common ones include *Pneumocystis carinii* pneumonia, Kaposi's sarcoma, extrapulmonary cryptococcosis, cytomegalovirus retinitis, and extrapulmonary tuberculosis. Patients may however go through a symptomatic stage before being diagnosed with AIDS. Common conditions then include oral candidiasis, herpes zoster and herpes simplex infection.

## HIV testing

HIV infection is generally detected by the presence of HIV antibody which appear in sufficient quantity within 3 to 6 months after infection. The antibody testing consists of a screening test (ELISA) and a confirmatory test (usually Western Blot). Those with negative result but may be in the window period need to be re-tested.

Pre- and post-test counselling are required for HIV testing. Under no circumstances should mandatory HIV testing be performed. Some reasons are: a negative result does not always confirm absence of infection, HIV is a stigmatised disease, no curative treatment are available yet, and changing the risk-taking behaviours is the only way of preventing AIDS.

### **Reporting of HIV/AIDS**

Department of Health is informed of the latest situation through voluntary reporting of new HIV/AIDS cases and their clinical parameters from attending physicians. To enhance understanding of the local scenario and trend of HIV/AIDS, reporting is highly encouraged and the information is kept under strictest confidence. Sex, age, date of birth, date of diagnosis, suspected route of transmission and the AIDS indicator diseases and CD4 count, if available, are requested but not the name and address.

### **HIV infection in women**

Increase in women HIV infection signifies an increase in heterosexual transmission and also likelihood of perinatal transmission. The natural course of HIV in women is believed to be similar to that of men although the disease manifestations may be different.

Preventing HIV infection in women is difficult because (i) woman is biologically more susceptible to sexually transmitted disease and HIV; (ii) safer sex practice (condom use) requires the cooperation of male partner; (iii) women are frequently economically inferior and have difficulties in negotiating safer sex; (iv) some women are often psychologically and socially dependent on men; (v) family and marital problems arise with changes in economic and political situations e.g. migration, travel; (vi) women may be unaware of the issue.

### **Management of HIV infection**

Advice on diet, life style, change of risk behaviours, partner notification and general hygiene measures are needed. Prophylaxis of opportunistic infections and antiretroviral treatment are offered as appropriate. Care of the psychosocial aspect should also be addressed.

### **Universal Precaution**

The best way to prevent occupationally acquired HIV infection in health care setting is through practice of universal precaution. This means all blood and body fluids should be treated as potentially infectious and handled with the same caution as the procedures require irrespective of the HIV status of clients/workers. In essence, this means using barrier to avoid direct contact with potentially infectious material, be careful when handling sharps, handwashing, and adherence to recommended measures of cleansing, disinfection and waste disposal. ■

# AIDS in Women

*Dr Tse Hei Yee*

Consultant, Department of Obstetrics & Gynaecology, Kwong Wah Hospital

## **Introduction**

The global HIV/AIDS epidemic has previously been described by the World Health Organisation (WHO) in three patterns. They were: (I) “Western” developed countries where extensive HIV spread began during late 1970s and primarily affecting homosexuals and drug users; (II) sub-Saharan Africa and South America predominated by heterosexual transmission; and (III) the rest of the world where extensive HIV spread had not started as of 1987, e.g. Asia-Pacific, eastern Europe and middle East. However, as the virus continues to spread to every corner of the world, in particular extensively in Asia, and also trend changes with time, the differentiation of involved regions by these three patterns is no longer clear. The rapid rise in the number of people infected by HIV in Asian countries is called the third wave of the AIDS epidemic. Studies in Thailand revealed three susceptible groups for HIV infection: intravenous drug users, commercial sex workers and young heterosexual men. This implies that women without known HIV-related risk factor can contract HIV through unprotected sexual contact with regular partner.

## **Heterosexual transmission**

Heterosexual contact is the most important mode of spread of HIV worldwide, accounting for three-fourths of the adult HIV cases. A study in Thailand in 1994 found that the probability of HIV transmission per sexual contact is 0.031. The risk is significantly greater when there is sexually transmitted disease (STD). For vaginal intercourse, female has a two-fold difference in favour of male-to-female HIV transmission as woman is receptive of semen and has a larger mucosal surface.

## **Women at risk of HIV infection**

Some factors are known to be associated with increased risk of HIV infection. These may be in common place with the male counterparts or may be specific to the female. Multiple sex partners, genital ulcer diseases e.g. syphilis, genital herpes, receptive anal intercourse and advanced HIV disease in partner predispose both parties to higher risk of infection. The role of oral contraceptive in HIV transmission is controversial. Study has found that cervical ectopy and chlamydial infection are associated with higher risk; but the relative contribution of each factor is unclear. Absence of circumcision in male partner may also be a risk factor.

## **Sexually transmitted diseases (STD)**

STD and HIV interacts bi-directionally. Genital ulcer diseases, e.g. syphilis, predispose to HIV transmission from an HIV-infected sex partner. On the other hand, presence of genital ulcer plus late stage HIV disease give an increased chance of HIV transmission to an uninfected partner. HIV infected women are more likely to have other STDs as both diseases can be transmitted by sexual contacts. STDs in the setting of HIV infection tend to present with a more aggressive course.

## **Cervical neoplasia**

HIV infection is associated with severe depression of the immune system and thus predisposes affected person to malignancy, besides secondary infection. Common tumours in patients with AIDS include Kaposi's sarcoma, non-

Hodgkin's lymphoma, alimentary tract tumours, anorectal tumours, and cervical neoplasia in women. There is an increased incidence of human papillomavirus (HPV) in HIV-infected women as they share common risk factors. HPV infection can predispose to cervical intraepithelial neoplasia (CIN) and cervical cancer. HIV-infected women with cervical carcinoma has poorer prognosis as the disease is more aggressive and the patient usually responds poorly to treatment due to the suboptimal immune function.

### **Contraception**

Similar to men, HIV-infected women should modify their risk behaviours to reduce horizontal transmission. This means the practice of safe sex", maintenance of monogamous relationship, avoidance of sex during menstruation, and regular usage of condom. Contraception is especially prudent for safeguarding against pregnancy and thus potential risk of mother-to-infant HIV transmission.

There are a number of contraceptive options. They have to be selected according to the specific situation and needs of the woman and her partner. Intra-uterine contraceptive device (IUCD) is generally contraindicated in patients with HIV and STD as it can predispose to pelvic infection. Also, it increases menstrual loss. Oral contraceptive pill is an effective form of contraception and is very useful for women who need better protection against pregnancy. It may, however, suppress cell-mediated response. Condom usage should be advocated as an important way of safer sex, bearing in mind that it does not offer 100% protection, as 10% slippage and breakage rate of male condom has been reported. Female may be better able to take on the initiative by using the female condom. It may also have better protection than the male condom as it covers a wider area of the female genital tract. The spermicide nonoxonyl-9 may damage the genital tract at high dose and has been shown to be a cofactor for HIV transmission.

HIV-infected women who are planning pregnancy should be counselled. The following issues should be covered: (i) prognosis of HIV

infection in the patient herself; (ii) future of her partner and her unborn child; and (iii) risk of perinatal transmission.

### **Antenatal HIV testing**

HIV infection in women is complicated by pregnancy and perinatal transmission. Identification of HIV-infected pregnant women can serve several purposes: (i) early treatment can be offered to improve outcome in both mother and child; (ii) treatment to reduce the risk of vertical transmission, and (iii) counselling and behavioural modification to reduce horizontal transmission. The way of identification may be affected by the prevalence of HIV infection in the population. There have been advocates of routine screening versus selective approach of testing women with high risk behaviours. Some people recommended screening if HIV prevalence is > 1:1000. The HIV prevalence, however, varies considerably across different places. It was estimated to be 1.88% and 5.45% for Bangkok and Chiang Mai of Thailand; whereas that of Bombay, India was 1.07%. Study has not reported HIV positive pregnant women in Japan. The low prevalence may be related to the high condom usage rate in Japan. The US Centers for Disease Control and Prevention (CDC) has recently recommended universal counselling followed by voluntary testing for indicated and consented pregnant women and infants.

### **Medical intervention to reduce perinatal transmission**

The AIDS Clinical Trials Group protocol 076 (ACTG 076) shed light on way to reducing perinatal HIV infection. It is a multicenter, randomised, placebo-controlled trial of zidovudine use in antepartum, intrapartum, and neonatal period. Use of zidovudine reduced the risk of perinatal transmission from 25.5% to 8.3%. Its use was associated with some mild transient toxicities: headache, gastrointestinal intolerance, anaemia, hepatitis, steatosis/lactic acidosis. Although its long-term effects are yet unknown, it is recommended to be used after first trimester.

## **Management of HIV positive mother**

There are specific issues relating to the care of HIV-infected pregnant women, including continuation/termination of pregnancy, medical monitoring and treatment, obstetric and fetal monitoring, and management during labour and puerperium. The mother should be counselled on whether to continue or terminate the pregnancy. There have been conflicting reports regarding the effect of pregnancy on HIV infection. The risk and consequences of perinatal transmission and termination of pregnancy should be discussed. Regular monitoring of HIV disease status should be offered, including both clinical and immunologic assessment. The aim is to have early detection and treatment of opportunistic complications. They should also be screened for STD and other risk factors e.g. drug abuse.

For women who decide to continue with the pregnancy, use of antiretroviral treatment should be considered. Monitoring for obstetric complications e.g. intrauterine growth retardation, preterm birth is important. During labour, invasive procedures including scalp electrode insertion, fetal scalp blood sampling and insertion of intrauterine catheter should be avoided. Instrumental or operative delivery should, however, be implemented if clinically indicated. Universal infection control measures is the gold standard to prevent transmission of HIV, hepatitis B and other blood-borne pathogens in the health care setting. Antibiotic cover for the delivery is probably not necessary in light of the present knowledge. In the post-natal period, HIV-infected mother should be followed up as usual. Advice on appropriate contraception and refrainment from breast feeding and breast donation is needed. The infant should also be followed up to ascertain infection status and be given necessary management.

## **Social Issues**

As AIDS is still a stigmatised disease with whom the patients may suffer from social isolation, optimal psychosocial support should be available and

tailored to individual's unique needs. The infection may bring about disruption of integrity in family. The association of HIV/AIDS with marginalised groups of e.g. commercial sex workers and drug abusers further adds complexity in the care of those HIV-infected and its prevention in these communities. ■

# Paediatric HIV Infection

*Dr. Lau Yu Lung*

Senior Lecturer, Department of Paediatrics, Faculty of Medicine, University of Hong Kong

## Female and paediatric HIV/AIDS scenario in Hong Kong

Heterosexual contact has become an important route of HIV transmission in Hong Kong. As a result of this change, female is more prone to HIV/AIDS. As of the end of June 1995, even though only about 12% of the reported cumulative HIV infections occurred in women, female HIV infection has increased rapidly in recent two to three years. Thirteen new women HIV cases were reported in the first half of 1995, close to that of 14 in whole year of 1994. The male to female ratio of HIV cases in the second quarter of 1995 was less than 1:4, further demonstrating the rising trend of female HIV infection. Two cases of perinatal transmission have been reported thusfar, one in 1994 and the other this year.

According to the HIV/AIDS estimation and projection done by Professor James Chin in late 1994, there were cumulatively 3000 HIV infections and 250 AIDS in Hong Kong. By the year 2000, the total paediatric AIDS, as a consequence of perinatal transmission, will stand at <100; of which more will appear at a time closer to 2000. In other words, the health care professionals, especially those in the Paediatrics and Obstetrics specialities, will have to face and provide health services for them. European experience showed that nearly 80% (out of 1546 cases) of paediatric AIDS cases was the result of mother-to-child HIV transmission. In the future, vertical transmission will continue to be the primary route for HIV infection in children, both locally and in places where safety of blood and blood products was adequately ensured.

## HIV testing in children

So, when should we suspect HIV infection in children and offer HIV testing? Certain clues in the

medical history, symptoms and signs, and specific diseases or clinical presentations could alert health care workers to the possibility of underlying HIV/AIDS. Children born to HIV positive mother, mother with HIV-related risk factors (drug use, multiple sex partners, husband or partner with risk factor), and mother symptomatic of HIV disease should be tested. Some conditions/presentations in children are suggestive of HIV infection, and HIV testing should be considered after taking into consideration of individual circumstances. In general, HIV testing is more warranted when the HIV prevalence among pregnant women is 1/1000 or more.

These medical conditions include recurrent, severe, or unusual infections (sites or organisms) e.g. recurrent pneumonia, persistent or recurrent oral candidiasis, recurrent oral gingivostomatitis, and severe or recurrent varicella. Chronic sinusitis or otitis, which are uncommon for normal children in Hong Kong, may point to underlying HIV. Active tuberculosis at an early age, as well as congenital infection (toxoplasmosis, syphilis, CMV) are also suspicious. Chronic interstitial pneumonia (probably etiologically related to Epstein barr virus) or any AIDS indicator disease must prompt testing for HIV. Unusual tumours can occur due to immunodeficiency or immunodys regulation. Human immunodeficiency virus can also directly infect the central nervous system, resulting in various neurological manifestations, and this sequel is not reflected in the name AIDS. Not uncommonly, HIV-infected children have developmental delay or regression, speech delay and even spasticity or other unusual neurological findings. HIV and its complications can cause wasting and the child fails to thrive. Alertness to abnormal physical and neurological growth and development is crucial to detect covert HIV infection in children. Other HIV positive children may present with hepatosplenomegaly and/or generalised/massive lymphadenopathy.

### **AIDS indicator diseases in children**

In an American study of 3655 perinatally acquired AIDS cases reported from 1982 to 1992, 37% had *Pneumocystis carinii* pneumonia, followed by lymphoid interstitial pneumonitis (25%). Recurrent bacterial infections occurred in nearly 20% of cases, in contrast to a lower frequency in adult AIDS patients. This is because the responsible humoral immunity has not had the chance to become fully developed. HIV wasting syndrome, candida esophagitis, HIV encephalopathy, cytomegalovirus disease, pulmonary candidiasis, *Mycobacterium avium* infection, cryptosporidiosis, and herpes simplex disease are relatively less common complications.

### **Diagnosis of HIV infection**

Diagnosis of HIV infection in infant is complicated by the placental transfer of HIV IgG antibody from mother to baby. Thus the diagnosis is established by the detection of the virus itself (or its components) for children less than 18 months old, and on more than one occasions. A child <18 months of age is confirmed HIV positive if he/she is known to be HIV seropositive or born to an HIV-infected mother **AND** has positive results on two separate determinations (excluding cord blood) from one or more of the following HIV detection test: [1] HIV culture, [2] HIV polymerase chain reaction, [3] HIV antigen (p24), **OR** meets the criteria for acquired immunodeficiency syndrome (AIDS) diagnosis based on the 1987 AIDS surveillance definition. A child  $\geq$  18 months of age is confirmed HIV positive if he/she is HIV antibody positive by repeatedly reactive enzyme immunoassay (EIA) and confirmatory test (e.g. Western Blot or immunofluorescence assay [IFA]); **OR** meets any of the criteria used for child <18 months old.

There exists a group of children who does not meet the criteria mentioned above but is HIV seropositive by EIA and confirmatory test and is <18 months of age at the time of test **OR** has unknown antibody status, but is born to a mother known to be infected with HIV. They are called perinatally exposed and given prefix E. Another group of

children is the seroconverter (SR) who has been documented as HIV antibody negative (i.e. two or more negative EIA tests performed at 6-18 months of age or one negative test after 18 months of age); **AND** has had no other laboratory evidence of infection (has not had two positive viral detection tests, if performed); **AND** has not had an AIDS-defining condition. The significance and outcome of these seroconverters are unknown at present and they warrant regular follow-up despite the apparent absence or clearance of HIV infection.

### **Classification and staging of paediatric HIV infection in Hong Kong**

When managing an HIV-infected child, it is important to gauge the severity of the damage made by the virus. In this regard, a system for categorising and staging the patients will be useful. The 1994 CDC classification system for paediatric HIV infection (Table 1) is widely used in many countries and facilitates communication of disease status among health care providers. Hong Kong has largely adopted it, with slight modifications concerning the local AIDS surveillance case definition. A format similar to the staging of adult HIV positive patients is used for children, namely the employment of both clinical and immunologic criteria. The difference is the finer division of HIV-related symptoms into mild, moderate and severe groups.

Compared with adults, children have a higher lymphocyte count, including CD4 lymphocyte. The normal range of absolute CD4 count also varies with age of the child, being higher for younger child. Thus it is necessary to correlate the absolute count with the age to assess the degree of immunosuppression. The use of CD4 percent avoids the variation caused by fluctuation of the total lymphocyte level and might more accurately reflect the CD4 level. In assessing the immunologic status of an HIV-infected patient, the lower category conferred by either the absolute count or percent will be taken (Table 2).

The severely symptomatic group refers to those children who have any condition listed in the 1987 surveillance case definition for acquired

immunodeficiency syndrome, with the exception of lymphoid interstitial pneumonia. These conditions are all AIDS-defining diseases. Although most conditions are opportunistic infections, encephalopathy and wasting syndrome are also important sequela of HIV infection in children, resulting in severe morbidity and impairment of function.

**Natural history of perinatally-acquired HIV**

**Table 1. Paediatric human immunodeficiency virus (HIV) classification**

Immunologic categories	Clinical categories			
	N: No signs/ symptoms	A: Mild signs/ symptoms	B: Moderate signs/ symptoms	C: Severe signs/ symptoms
1: No evidence of suppression	N1	A1	B1	C1
2: Evidence of moderate suppression	N2	A2	B2	C2
3: Severe suppression	N3	A3	B3	C3

Children whose HIV infection status is not confirmed are classified by using the above grid with a letter E (for perinatally exposed) placed before the appropriate classification code (e.g. EN2)

**Table 2. Immunologic categories based on age-specific CD4+ T-lymphocyte counts and percent of total lymphocytes**

Immunologic category	Age of child					
	<12 mos		1-5 yrs		6-12 yrs	
	/uL	(%)	/uL	(%)	/uL	(%)
1: No evidence of suppression	≥ 1,500	(≥ 25)	≥ 1,000	(≥25)	≥ 500	(≥25)
2: Evidence of moderate suppression	750-1,499	(15-24)	500-999	(15-24)	200-499	(15-24)
3: Severe suppression	<750	(<15)	<500	(<15)	<200	(<15)

## infection

There are two populations of children with perinatally-infected HIV regarding their natural course and prognosis. 11-16 % of the group with poor prognosis (usually develop AIDS early) die at a median age of 5-11 months. The second group survive beyond 4 years of age and the median age at death is >60 months. In one study, more than 70% of the HIV-infected children are still surviving at 5 years of age. Similarly, in another study, the proportion free of AIDS or HIV-related symptoms/signs at 3 years old were about 70% and 20% respectively. Studies have shown that the CD4 cell number is a good prognostic marker. HIV-infected children who were long-term survivors had a higher CD4 count than the short term survivors at the same age.

## Immunisation

The recommended immunisation programme for children (Table 3) has to be modified in HIV-infected people. In general, due to underlying immunodeficiency, live vaccines are not recommended in HIV-infected children. However, it was found that those who are not given measles vaccine often died from its complications if they contracted measles. On the other hand, no severe adverse reaction has been reported in the HIV-infected who received measles vaccination. Thus one should not refrain from giving measles vaccine in children with HIV. Inactivated poliovirus vaccine (IPV) is preferred to oral poliovirus vaccine (OPV) as the latter is associated with poliomyelitis in the immunodeficient vaccinees and also it may be prolongedly excreted in the faeces and affect immunodeficient contacts.

**Table 3. Recommended Immunisation Programme for children in Hong Kong (an alternative presentation)**

Vaccine	Birth	1 month	2 months	3 months	4 months	5 months	6 months	12 months	18 months	P.1	P.2
BCG	BCG									BCG	
Hepatitis B	HB 1	HB 2		HB 3							
DTP			DTP 1								
				DIP 2							
				DIP 3					DTP	Td	Td
OPV	Type 1		OPV 1								
				OPV 2					OPV	OPV	OPV
MMR								MMR			

### Remarks :

BCG for all newborns from 1950.

Triple Vaccine (DTP) introduced in 1956.

Oral poliomyelitis vaccine (Trivalent OPV) given since 1963.

Type 1 Polio vaccine (monovalent OPV) introduced to newborns since 1966.

Anti-measles vaccine (AMV) started in 1967.

Hepatitis B Vaccination (HBV) for all newborns started from November 1988.

The CDC of USA has a recommendation for the routine immunisation of HIV-infected children (Table 4). The essence of the recommendation is accepted in Hong Kong. However, there is regional difference in the immunisation regimen. In Hong Kong, BCG should be given to asymptomatic HIV-infected children but avoided in symptomatic ones for fear of disseminated BCGosis. Type I poliovirus

vaccine should not be given to babies born to known HIV-infected mothers. Hong Kong has not yet included Haemophilus influenzae type B, pneumococcal and influenza vaccine in childhood immunisation and their indication for HIV-infected children have not yet been clearly defined. ■

**Table 4. Recommendations for Routine Immunization of HIV-Infected Children in the United States**

Vaccine <sup>+</sup>	Known Asymptomatic HIV Infection	Symptomatic HIV Infection
Hepatitis B	Yes	Yes
DTP	Yes	Yes
OPV	No	No
IPV	Yes	Yes
MMR	Yes	Yes
Hib	Yes	Yes
Pneumococcal	Yes	Yes
Influenza	Should be considered	Yes

<sup>+</sup> DTP = diphtheria and tetanus toxoids and pertussis vaccine

OPV = oral poliovirus vaccine

IPV = inactivated poliovirus vaccine

MMR = live-virus measles, mumps, and rubella

Hib = Haemophilus influenzae type b conjugate

# Perinatal HIV Transmission

*Dr Wong Ka Hing*

Acting Senior Medical Officer, Special Preventive Programme, Department of Health

## **Background**

Biologically, perinatal transmission is an efficient mode of HIV transmission, second to transfusion of contaminated blood or blood products. Epidemiologically it is the commonest mode of childhood HIV infection worldwide, and has accounted for 5-10% of global cumulative total. Risk of perinatal HIV infection varies according to different studies in different populations. It is 15-30% in developed countries like USA and Europe. The risk is generally higher in developing countries, e.g. 25-50% in Africa and 23.8% in Thailand.

## **Timing**

There is evidence that mother-to-infant transmission can occur in the following periods: (i) in utero, (ii) intrapartum: during labor and delivery and (iii) postnatal: breastfeeding. The exact relative contribution of each stage is unknown. However, some people believe that as many as 50% of cases may occur shortly before or during birth. Infection during pregnancy is usually detected within the first 48 hours of life whereas intrapartum infection is detected from day 7 to day 90. Breastfeeding may increase the risk by about 10-30% and should be avoided if safe alternative is available.

## **Higher risk of perinatal transmission**

Some factors or conditions have been found to be associated with a higher risk of infection, including maternal ones like advanced HIV disease, recent seroconversion, low CD4 count, p24 antigenaemia, and high viral titer. Intrapartum risk factors include premature delivery, premature rupture of membrane, and prolonged and difficult labor.

## **Perinatal HIV infection & antenatal HIV testing in USA**

The CDC estimated that about 7000 HIV-infected women gave birth in 1993, corresponding to an HIV prevalence of 1.6/1000. Given the risk of 15-30% transmission, 1000 to 2000 babies will become HIV positive. The CDC has noted the drawbacks of limiting HIV counselling and testing for women with known HIV-related risk behaviours. This is because the mothers may be unaware of their risk if not prompted and they may deliberately avoid testing due to stigma. Studies have found that 50-70% of HIV-infected women may be missed in this way. Hence, the CDC has recommended universal HIV/AIDS counselling and voluntary testing for antenatal mothers. The risk of uninfected ones can be reduced through counselling and behaviour modification whereas infected people can be detected earlier and offered suitable medical and social services. Future HIV spread can also be minimised.

## **Possible Interventions**

Various methods of reducing perinatal HIV transmission have been investigated and they are met with variable success. It is clear that even if the method is effective, it can only be implemented if maternal HIV infection is diagnosed. Possible intervention can be targetted at the various stages when HIV infection occurs. For example people have proposed active and passive immunisation for the in-utero period and the infant. Obstetric intervention with virucide or caserean section has been examined for targeting the intrapartum stage. Antiretroviral therapy may cover the whole period from pregnancy to after birth.

At present, the only modality that has been proven to significantly reduce the risk of perinatal HIV transmission is zidovudine treatment, as shown in the ACTG 076 study. A course of zidovudine (ZDV) given for drug-naive pregnant women with CD4 >200/ul during second/third trimester, and during labor and continued for infant after birth could decrease the transmission from 25.5% to 8.3% in 409 studied subjects (i.e. two-third reduction). There is only some short-term toxicity, including lower initial haemoglobin for ZDV-treated infants. No difference in congenital anomaly or reduced body weight has been observed. Whether the benefit can be projected to mother with more advanced HIV disease is, however, uncertain.

The role of caesarean section is still inconclusive. The European Collaborative Study found that the risk of perinatal infection can be reduced from 18% to 9.9% . However, the operation carries with it potential morbidity and mortality, which may be even greater in HIV-infected mothers. Randomised controlled trial to compare the infection rate of caesarean section with vaginal delivery may be practically difficult.

## **Conclusion**

The most effective intervention for reducing perinatal HIV transmission is to prevent female HIV infection in the first place, especially for women in child-bearing age women. In this regard, target-oriented AIDS education should be delivered. This should best be integrated into the existing health education and promotion activities for the women, e.g. that of antenatal clinic or family planning section. Similarly, care of people with or at risk of HIV infection can be best undertaken or started in the existent health and social services. ■

# HIV/AIDS Counselling

*Miss Jennie Chow*

Nursing Officer, AIDS Unit, Special Preventive Programme, Department of Health

## Vulnerability of women to HIV infection

Women are often more vulnerable to HIV infection than men. There are many physiological & psychosocial reasons why they have higher chance of being exposed to and infected by the virus. The major factors are:

### 1. *Receptive sexual partner*

Biologically, the female plays the receptive role during sex. The female genital tract, including vagina, has a large surface area for entry of HIV.

### 2. *Uterine, cervical and vaginal conditions which promote HIV transmission*

- a. cervical erosions or cervical ectopy are common
- b. inflammation or infection of the vaginal walls
- c. STDs are often unnoticed and women may not seek treatment
- d. menstruation results in a large, raw, exposed area of the inner uterine lining

### 3. *Disadvantageous status of women*

- a. female is often submissive in the sexual relationship; they often have less control over their sexual lives and in negotiating safer sexual practices with their sexual partners.
- b. it happens that monogamous and faithful women contract HIV unknowingly from her sexually "promiscuous" husband.

**We divide "Counselling" into 5 areas: WHAT, WHO, WHERE, WHEN and HOW**

## What is counselling ?

It is an ongoing dialogue involving personal interaction between client and counsellor. Its purpose is to help client understand better his/her condition, enable client to cope better with stress and anxiety, find realistic ways to solve problems and make decisions. It is conducted with the aim of: (1) preventing transmission of HIV infection, (2) providing psychosocial support to those infected or affected by HIV/AIDS, and (3) assisting in decision making and problem solving.

In preventive counselling, we encourage behaviour change for those uninfected to prevent HIV infection in the future. For those already infected, behaviour change can prevent transmission to others, or reinfection for self. Updated information relevant to their needs and life style should be given. Since AIDS is an often stigmatized disease, psychological support to the infected person and his significant others is essential. We should help the family to accept the clients and in turn give the client care & encouragement that would improve the relationship. On the other hand, we motivate the patient to develop a strong sense of responsibility, so as to facilitate behaviour change to protect themselves & others. Counselling seeks to help people with HIV/AIDS to make decision about their life, boost their self-confidence, maximise their survival chance in receiving treatment and help, develop their potential and improve the quality of life. For HIV positive woman, the issue of pregnancy and contraception, and continuation or termination of pregnancy for the already pregnant ones, need to be attended to. For people considering HIV testing, counselling will help in their decision making process.

### Who/When needs counselling?

1. *Persons/partners with HIV-related risk behaviour*, e.g. unprotected sexual intercourse, multiple sex partners, needle-sharing for drug-injectors. Counselling at pre & post HIV antibody testing are needed.
2. *People with HIV/AIDS*. They present different with problems at different stages of the disease, and counselling should be given accordingly.
3. *Anti-viral drug treatment*. Health care workers have to explain to clients about potential benefit and adverse reaction of the drugs, and help them understand and make decision on the choice of drugs, such as AZT, ddI or ddC.
4. *Anytime suffering from physical/psychological/social impact*. Provide support whenever they encounter any problems that demands care & support from the care providers.
5. *Pregnancy*. The issue of conception, contraception, continuation/termination of pregnancy
6. *The worried well*. An example is that some persons who have one or two protected sexual encounters and they worry profoundly about the possibility of contracting the virus. Even though they are tested HIV antibody negative, they still have a lot of worries.
7. *Sexual partners/family members/carers*. Sexual partners may fear about being infected, or may feel angry at being put at risk of infection. On the other hand, they may be the main source of care & support. The type of care required depends on the stage of infection. Emotional response may increase as the patient's condition deteriorates. They may experience high level of anxiety, fear & loss. They should be helped to cope with crisis.
8. *Terminal AIDS patients*. They need a lot of physical & psychological support, hoping to achieve a dignified & peaceful death.
9. *Bereavement*. The family members need grief counselling & support at the loss of their beloved ones.

### Who should do the counselling?

The nurse, doctor, teacher or social worker or psychologist who have basic counselling skills, together with updated relevant information, can be good counsellors.

### Where should the counselling be held?

It should be held in a safe environment that is private and confidential.

### How to perform an effective counselling?

The following elements are required:

- I. **Knowledge**. The counsellor should be equipped with updated professional knowledge, information on modes of transmission, methods of prevention, psychological reaction and available supporting facilities.
- II. Ability to **communicate information** to the client in a clear, objective and consistent manner is crucial. The use of medical jargon should be avoided.
- III. **Trust and confidentiality**. Trust is one of the important factors in the relationship between the counsellor and the client. Trust improves the working relationship and increases the likelihood that the client acts on the information provided. It is important that confidentiality is stressed at the beginning of the counselling session.
- IV. **Time**. Sufficient time is important from the start. Time must be taken to allow the person to absorb news about the diagnosis of AIDS. Time is necessary to allow the establishment of trust and rapport. Counselling may end after a few sessions, or may last for a few months (depending on the client's need).
- V. **Attitude**. Counsellor must be patient, honest, sincere, empathetic, non-judgmental and considerate, willing to listen and help. She/he should respect her/his client as an individual, and accept him/her irrespective of his/her life-style, sexual preference, socio-economic and cultural background.

VI. **Technique.** The counsellor should possess good counselling skills, such as active listening, communication and observation. She/he must show understanding and empathy. Empathy involves understanding the experience, behaviour and feelings of others as she/he experiences them. It means that the counsellor must put aside her/his own bias and prejudices, and enter into the experience of her/his client in order to develop a feeling for the client's inner world and how one views both the inner world and the world of people around him/her.

It's not enough just to understand a client's feeling, but one must also be able to reflect one's understanding back to the client. When a counsellor listens, she/he must listen to both the content and feelings. Use open-ended questions to obtain more information and clarify misconception. The counsellor should be able to focus and summarize what the client says and feels and reflects back.

The counsellor has to encourage the client to express his/her point of view and ventilate his/her bottled-up feelings such as anger, anxiety, fear, grief and guilt, helping him to dissolve them, making them easier to understand and reduce the pain caused by them.

The counsellor may set up options open to the clients, and help him/her to follow whichever one chosen. The plan should be realistic so that the client can put into action. Sometimes referral may be required, eg. social worker, support group.

### **Pre-test counselling checklist**

1. ***Establish the reason for testing***
  - explore why the test is needed
  - obtain sexual history and drug history
  - assess the client's risk
  - establish the reason or goal of testing
2. ***Providing information***
  - explain the difference between HIV infection & AIDS

- explain what the HIV antibody test is and its limitation
  - the meaning of a positive and negative result
  - the window period
- discuss risk reduction

### **3. *Implications of testing***

(a) discuss the advantages / disadvantages of testing

*Advantages:* -

- reduce stress with knowledge of one's negative blood result
- early diagnosis can facilitate early and prophylactic treatment
- help in future planning
- motivate to protect sexual partner through modification of sexual behaviour

*Disadvantages:* -

- positive blood results create stress & uncertainty
- risk of social stigma & discrimination
- affect the relationship with sexual partner
- restriction of life insurance & job etc

(b) discuss confidentiality of the test results

(c) discuss anxiety arising from waiting for result & possible reactions to learning result

### **4. *The testing procedure***

- obtain informed consent
- explain the blood taking procedure
- explain how and when to obtain the blood result

### **Post-test counselling checklist**

1. ***Communicating the test result***
  - reveal the result clearly and explicitly
  - assess the client's understanding e.g. what is meant by a positive or negative result
  - encourage to express feeling & reactions, such as crying, anger etc.

2. ***Assessing the psychological response to being HIV + ve***
  - assess psychological condition
  - help to cope with psychological, social, and financial impact
  - refer to appropriate organizations if necessary eg. social worker for financial problem or recompassionate housing
  - explore supporting network: doctor, nurses, social workers
  - discuss who to / who not to tell
3. ***Discussing the consequences of being HIV + ve***
  - discuss the health & reproductive consequences of being HIV +ve
  - arrange medical follow up
4. ***Reducing risk -producing behaviour***
  - review the mode of HIV transmission
  - review the client's risk behaviour & how it may be modified
  - arrange for partner notification, and bring partner for HIV testing
7. explore supporting network and encourage to join self-help group. Encourage the client to share experience with infected peers
8. encourage a normal social life as far as medical condition permits
9. actively encourage to adopt a positive health behaviour
  - well balanced diet, regular sleep, adequate rest and moderate exercise.
  - avoid recreational drug, and excessive use of tobacco and alcohol.
  - reduce stress and relax. Potential and actual stress factors should be identified and managed.
  - maintain regular contact with the health care system including counselling and social services; encourage a positive attitude to life, have a "fighting spirit" so that one feels having a worthwhile life.
  - promote a sense of personal responsibility in stopping further spread of HIV infection

**Issues to be highlighted in counselling persons with AIDS/HIV**

1. safer sex and proper use of condom to protect spouse and sexual partners from infection
2. advise on prevention of HIV transmission through blood, wounds, needles and sharp instruments; discuss the method of disfection at home; advise against donating blood or body organs, and sharing of tooth brush and razor.
3. reassure about safety of casual contact
4. discuss the course of illness, available treatment and medical care
5. stress the importance of regular follow-up
6. help the client to cope with psychological, social, financial and legal impact
10. encourage client to bring his spouse or sexual partner for counselling and blood testing
11. discuss on issue of pregnancy in relation to HIV infection if the client or one's spouse is a woman of child-bearing age
12. discuss with the client on who to tell, and who not to tell about one's HIV status
13. help the client address issues surrounding death ■

# Counselling Workshop

*Miss Lina Lau*

*Miss Jennie Chow*

*Miss Elsie Chu*

*Miss Clara Chan*

Nursing Officers, AIDS Unit, Special Preventive Programme, Department of Health

After the thorough introduction on HIV/AIDS counselling, 60 nurse participants attending the workshop were divided into 4 groups. Each group was led by a nursing officer from the AIDS Unit. The aim of the group discussion was to apply their learning from the lectures to their real working situation.

Since majority of the nurses have been recruited from the Family Health Service of the Department of Health, the working environment for discussion was selected to be the Maternal and Child Health (MCH) Clinic. The theme of the discussion was: *"What are the hints that will prompt a nurse to investigate into the possibility of HIV infection in women or children in the M.C.H. setting?"* The aim of discussion was to increase nurses' awareness in identifying individuals at risk for early detection of HIV infection, referral for appropriate treatment and preventing HIV infection through e.g. perinatal transmission.

## **General considerations**

Although HIV prevalence is still low in Hong Kong, an increasing trend of heterosexual transmission and women infection has been noticed. There were 2 reported cases of perinatal transmission as at 30 June 95. The number of cumulative children with AIDS in the year 2000 is estimated to be 90. If we want to decrease perinatal HIV transmission, the primary issue would be to educate the at-risk population and prevent women from being infected. Early detection of HIV positive women is also essential for reducing perinatal transmission through intervention.

It does not mean that all HIV infected women **must not** give birth. Counselling should be

provided to cover issues like the client's health situation, her husband's HIV status, their knowledge about HIV/AIDS, the meaning of child birth for them, whether there is any pressure from others concerning child birth, available assistance for child caring after delivery, possibility of perinatal transmission, and potential efficacy of intervention with AZT.

In case an HIV positive pregnant mother or her spouse want to terminate the pregnancy, nurses need to discuss with them about choice and possibility of future pregnancy, the complication of termination of pregnancy, care of the woman after termination of pregnancy and the need of family planning afterwards.

In order to discuss the issue of HIV infection with a woman, the basic requirement is a good nurse-client relationship. Due to cultural reasons, Chinese tend to be passive and quiet. Hence, nurses need much effort to encourage women to voice out their feelings, especially on those embarrassing matters like sex. Attitude of the nurses should be warm, friendly, empathetic and non-judgemental. Clients feel safe when they sense that the nurse is willing to help and has confidence to deal with the situation. A place that can provide privacy and enough time to tackle the problem is essential. It is unfair to the client if the nurse just digs out the problem without giving referral. The client may also experience emotional upset during the conversation. In communication, active listening skill should be employed. It is useful to observe the non-verbal hints that may give clues to hidden issues.

Family Health Service consists of ante-natal, post-natal, family planning, and infant/toddler sessions. Nurses working in M.C.H. encounter many women clients during their work. Thus, similar to conducting other health promotion activities, MCH is an ideal place to give health education on the prevention of HIV infection and to identify at risk group for HIV antibody screening. Pre-test and post-test counselling should be given if HIV antibody screening is necessary. The contents of the counselling should include knowledge on HIV/AIDS and the meanings of a negative/positive result. Client should be psychologically prepared and never be forced to have the blood test. Discussion on keeping a monogamous relationship with an uninfected partner, or safer sex such as consistent and correct use of condom, and acts like mutual masturbation are ways of preventing HIV infection.

### **Ante-natal session**

At the first booking, nurse should note the age of the client, history of teenage pregnancy, being unmarried mother, history of frequent termination of pregnancy, age at marriage and the number of deliveries. These will give hints on the sexual history of the client.

The occupation of the client and her husband may be important. People who need to be frequently away from home because of work may be more likely to engage in high risk behaviours, due to factors like sexual need and influence by peers. If the client has engaged in commercial sex work, nurses should be alerted to provide information and counselling on AIDS as appropriate. Nurses should also enquire about any drug addiction history of both the client and her husband.

After establishment of rapport with the client, more in-depth conversation can be made in subsequent visits. When a client shows extreme worry about fetal abnormality, nurse can try to find out the underlying cause. When blood result for VDRL is positive, in-depth counselling should be provided.

### **Family planning session**

Clients attend family planning session for advice on and provision of contraceptive means. Nurses can discuss with clients that condom can serve both purposes of contraception and protection from sexually transmitted diseases, including HIV. Clients on contraceptive pills or injections should be encouraged to use condom if necessary.

When client complains of frequent vaginal discharge or genital discomfort, nurses can initiate to find out the reason for the repeated infection. They should be referred to Social Hygiene Clinics if necessary.

In case the client asks for closing of her family planning record, nurses should also investigate into the cause. Separation or divorce from her husband may be the reason, which can in turn be related to extra-marital affairs - a clue of underlying high risk sexual behaviours.

### **Infant and Toddler Session**

Signs and symptoms of HIV infection can be subtle. Infected people may remain healthy for a long period of time without being noticed. An infected child may be the first of the infected family members to present clinically. HIV infection may lead to failure to thrive, developmental delay or regression. The child may have frequent infection such as oral candidiasis. If there is no other cause found for such conditions after investigations, the possibility of HIV infection should be seriously considered and this needs to be discussed with the parents and HIV testing be undertaken as appropriate.

### **Staff risk and concern**

During the workshop, some health care staff are concerned about the risk of HIV infection e.g. when performing bathing for the newborn babies. Staff are reminded of taking universal precautions for all potential encounters with blood and body fluid, which is the only means to effectively prevent

blood borne disease. Use of appropriate barriers, caution when handling needles and sharps, proper disinfection and disposal of waste are the essential principles to follow.■