

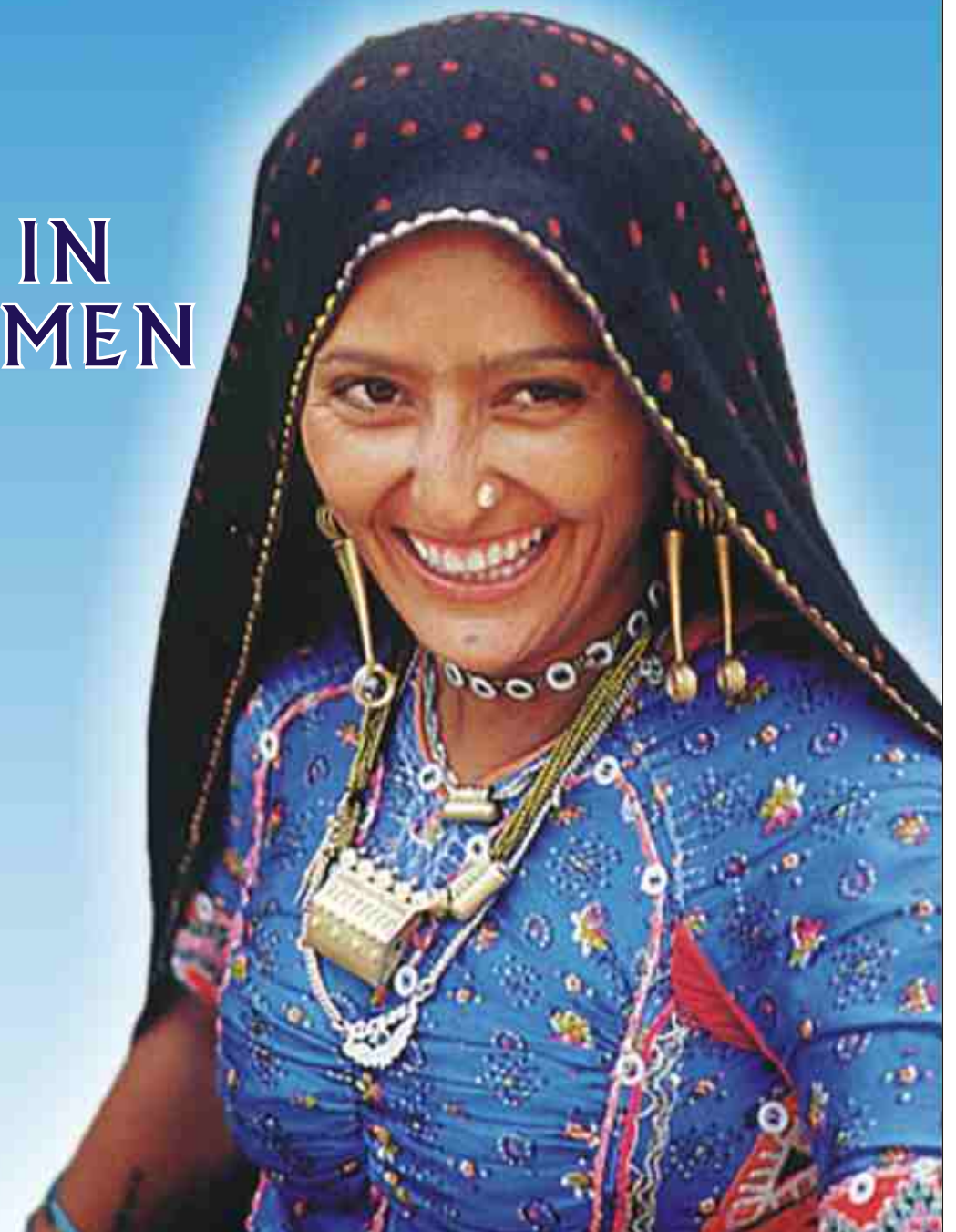


FOGSI FOCUS

NOVEMBER 2008



HIV IN
WOMEN



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HIV IN WOMEN

Editors - Dr. C N Purandare & Dr. Laxmi Shrikhande

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PRESIDENT's Message

Dear FOGSIANS,

Greetings,

It is a pleasure to present to you this FOGSI FOCUS on HIV-AIDS in women.

HIV-AIDS is a problem in India and each one of us are faced with patients of HIV at some stage of or practice.

According to the latest update on the worldwide AIDS epidemic from the Joint United Nations Programme on HIV/AIDS, the global population of women living with HIV/AIDS grew by 1.2 million between 2004 and 2006 to a total of 17.7 million, or 48% of the total population of adults living with HIV. This increasing prevalence among adult women has been observed in every region and country, including India. In India, women account for around one million out of 2.5 million estimated number of people living with HIV/AIDS. The prevalence rate for adult females is 0.29 percent, while for males it is 0.43 percent. This means that for every 100 people living with HIV and AIDS (PLHAs), 61 are men and 39 women. According to NACO, with 27 million pregnancies a year and an overall estimated 0.3% prevalence rate of HIV infection among pregnant women, it is estimated that about 100,000 HIV infected women deliver every year in India.

As you can see by the statistics, HIV-AIDS in women is a problem in India.

FOGSI this year has undertaken upon itself to spread social awareness about HIV, AND IN THE RECENTLY CONCLUDED FOGSI ASTRA BHARAT JAGRUTI YATRA a special presentation made by Dr. Laxmi Shrikhande was presented at all the camps.

FOGSI has also signed a historical MOU with the UNICEF to bring out guidelines for the private practitioner for handling HIV and AIDS. This 3 year programme will be run by FOGSI under the guidance of Prof Alokendu Chattarjee and Dr C N Purandare.

FOGSI has also in this year started a FOGSI HIV-AIDS PEP HELPLINE 09997177999, this help line is manned by experts 24x7x365 and these experts will answer all your queries about HIV-AIDS, PEP and any other information. Currently this is for FOGSI members' only. I acknowledge the efforts of Dr Alok Vashishta for making this help line operational.

Friends this FOGSI FOCUS comes to you on the occasion of the WORLD CONGRESS ON HIV-AIDS IN WOMEN at NAGPUR. I congratulate Dr Laxmi Shrikhande for her untiring efforts towards this FOGSI focus and for organizing this CONFERENCE.

**EDUCATE, PREVENT AND ERADICATE
FOGSIANS ONLY YOU CAN MAKE A DIFFERENCE**

Dr. Narendra Malhotra
President FOGSI 2008

EDITOR's Message

Nearly 40 percent of the 2.5 million HIV positive people in India are women and nearly 80 percent of them have contracted this infection from their husbands or partners. What we are seeing is an increasing feminization of the epidemic everywhere. ... the AIDS response in most countries has still not taken full account of the extent to which gender inequality and the low status of women are driving the epidemic, if we continue to fail to address women's lack of sexual power, we have no chance of bringing HIV under control.

After more than 25 years and 25 million deaths, the world has yet to realize that HIV isn't just a man's problem. Although it has escaped the notice of most media -- and even many in the health care and health policy fields - HIV has quietly become the third most-deadly disease for women in the United States, behind only cancer and heart disease. It's also the leading cause of death for African-American women between the ages of 25 and 34. Today women account for 25 percent of all new HIV/AIDS diagnoses in the country.

In this issue of FOGSI Focus we have tried to explore the various issues related to HIV in women. FOGSI theme this year is women Empowerment & this FOGSI Focus is a step towards it as in this era every woman must know how to protect herself, her partner, and any children she may choose to have from this deadly disease.

We express our heartfelt gratitude to all the authors for timely submission of well written articles. We thank FOGSI president Dr Narendra Malhotra & the entire team for entrusting us with the responsibility of editing this FOGSI Focus on HIV in Women. We hope it serves as a ready reference for all the gynecologists & general physicians as it contains all the relevant topics which are needed for our day to day clinical practice.

We all know that at present there is no cure & no vaccine. What we can propagate is prevention. Come; let's join hands together in fighting this social evil.

Dr C. N. Purandare
President Elect FOGSI

Dr Laxmi Shrikhande
Chairperson - HIV / AIDS Committee, FOGSI



FOGSI - UNICEF - NACO Initiative

●● Dr C. N. Purandare
President Elect FOGSI

●● Mr. Ajey Bhardwaj



FOGSI under the leadership of Dr. Narendra Malhotra, & with the support of Dr C N Purandare, Dr Laxmi Shrikhande, Dr Alokendu Chatterjee, Dr Madhuri Patel and Mr Ajey Bhardwaj have been successful in forging a partnership with UNICEF-NACO for Operationalizing implementation of PPTCT services in the private sector by FOGSI as per guidelines of NACO within the larger NACO – UNICEF initiative to fight HIV/AIDS in India.

1. Background

India has a population of one billion plus, around half of whom are adults in the sexually active age group. The first AIDS case in India was detected in 1986; since then HIV infection has been reported in all States and Union Territories.

The spread of HIV in India has been diverse, with much of India having a low rate of infection and the epidemic being most extreme in the southern half of the country and in the far northeast. The highest HIV prevalence rates are found in Maharashtra in the west; Andhra Pradesh and Karnataka in the south; and Manipur and Nagaland in the northeast.

A national adult HIV prevalence rate is 0.3%, translates to 2.2 to 3 million men and women living with HIV out of which more than a million live in rural areas. Women account for 39% of new infections: a trend with serious implications as more HIV positive mothers will unknowingly pass the virus on to their children. The most effective public health strategy to avert new infection in children is prevention of mother to child transmission through antiretroviral prophylaxis and safe infant feeding. These interventions can drastically reduce the risk of infection to newborns and infants by 50 to 75%. Government of India based on this fact has designed a national Prevention of parent-to-child transmission (PPTCT) programme that reaches pregnant women and their partners in all the states of India.

The NACP III (National AIDS Control Programme Phase III (2007- 2012) has clearly spelt out the targets and priorities for the PPTCT program. Targets set under the new NACP III strategy is to cover 7,500,600 pregnant women with counseling and testing services and 75,600 HIV positive women with ARV Prophylaxis services in the next five years (2007 – 2011). The plan also focuses on the decentralization of the HIV/AIDS response to the district level. The overall goal of NACP-III is to halt and reverse the epidemic in India over the next 5 years by integrating programmes for prevention, care, support and treatment. Strengthening the infrastructure, systems and human resources in HIV & AIDS prevention, care, support and treatment programmes at the district, state and national level is one of the key components in the plan.

As of now of the total HIV+ estimated pregnant women in the country, only about 10-15% are receiving PPTCT services. The reasons for this include low institutional deliveries (about 40%), lack of follow-up and a major portion of these deliveries take place in the private sector where partial/no PPTCT services as per national guidelines are provided. GOI has initiated several steps to increase the institutional deliveries (offering

incentives to families & monetary compensation to the medical practitioners and strengthening of institutions in the public sector to be able to conduct the normal/emergency deliveries) NACO (National AIDS Control Organization) on the other hand has initiated several steps under NACP III to strengthen the delivery of PPTCT services.

A major chunk of the institutional deliveries are taking place in the private sector (60-80% of total institutional deliveries) thus there is a need to rope in the private practitioners who can play a critical role in the success of the delivery of PPTCT services and help GOI (Government of India – Ministry of Health and Family Welfare) - NACO achieve the indicators of NACP III.

FOGSI – UNICEF – NACO – AVNI collaboratively propose to address this gap in the private sector to reach the national programme targets.

2. Broad Project Objective

The overall objective of the project is strengthening scale-up plan of PPTCT services in the private sector within the larger initiative of NACP III which is to halt and reverse the epidemic in India over the next 5 years by integrating programmes for prevention, care, support and treatment.

The specific objectives of the project in the 1st Phase include

- To formulate an HIV/AIDS policy framework for FOGSI members and Private sector offering PPTCT services.
- To sensitize and educate FOGSI members on the implementation of FOGSI HIV/AIDS policy.
- To operationalise PPTCT services in 2 nursing homes of FOGSI members present in a maximum of 15-30 high priority districts as per NACO classification.
- To set up a national E- database for strengthening the monitoring and evaluation process and reporting for the program.

3. Proposed Outcomes

- HIV/AIDS policy for PPTCT services delivery in the private sector.
- Approximately 24000 FOGSI members will be sensitized.
- 60 FOGSI members in 15- 30 high priority districts will be implementing the PPTCT services.
- Development and implementation of an E Database.
- FOGSI website is fully operational with PPTCT details.

Project has already started & we hope to complete it by December 2009. By December 2008 we will be ready with FOGSI guidelines for our members who are in private sector & also a user friendly training module for our members & their hospital staff. Let us join our hands together irrespective of whether we are in public or private sector & strengthen the hands of Government of India in reducing the PPTCT rate at par with developed countries.





Global and Indian Scenario

•• DR S. Shantha Kumari

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India is in the position of the African continent 15 years ago. Within a year or two India may well surpass South Africa as the country with the greatest number of people living with HIV-1/AIDS. Peter Piot, director of UNAIDS, states, "The future of the global epidemic is really at stake in India." With a population of 1 billion, large numbers of commercial sex workers, mobile male workers, a high prevalence of STDs, low reported condom use with non regular partners and a low prevalence of male circumcision, India is set to experience an explosion of HIV-1 cases. The official Indian government statistic of 2.5 million HIV-1-positive people is uncertain because large, reliable, population-based surveys have not yet been done. In 2002, the US National Intelligence Council projected 20–25 million people living with HIV-1 in India by 2010. The National AIDS Control Organization predicts only 9 million by that time. The most thoroughly researched and current mathematical models project the number of HIV-1-infected adults at about 50 million by 2015 if no effective interventions are implemented.

Since the first report of HIV infection in India in 1986, the virus has spread all over the country although there is geographic variation. There are estimated 5.1 million people infected with HIV with an overall estimated adult prevalence below 1 per cent. Surveys carried out in different sub-populations have yielded prevalence estimates, but data on HIV incidence are limited. Both HIV serotypes 1 and 2 exist in India and HIV-1 C is the commonest subtype reported. Sexual transmission of HIV is most predominant. Spread of HIV in intravenous drug use settings is localized mostly in the north eastern region and metropolitan cities and parent to child transmission is on the rise. Dual epidemics of HIV and tuberculosis, increase in the number of infected women, stigma and discrimination are the main concerns in the Indian HIV/AIDS scenario. There is an increasing political will and commitment for HIV prevention and control efforts in India.

UNAIDS estimates indicate that 5–7 million people are living with HIV/AIDS in the Asia – Pacific region. Different countries of the region are at different stages of the epidemic, depending on how it all began and how it continues to spread. Countries with high prevalence are Cambodia, Myanmar, and Thailand. These aggregate numbers hide more than they reveal. Firstly, for populous countries, a small prevalence rate will translate into large absolute numbers. For example, India and People's Republic of China account for most of Asia's infected cases due to their large populations.

As of March 2001, India has reported a cumulative total of 203043 cases of AIDS (15563 males and 4741 females); no single state or union territory is free from HIV. In eighty three percent of these AIDS cases, HIV infection was acquired through the sexual route, four percent through sharing of injection equipment, and another four percent through transfusion of contaminated blood and blood products. Peri-natal transmission accounted for 2 percent of the total AIDS cases. For the rest of the AIDS cases, the route was unknown.

While males between 15–29 year (6022/15563) and 30–44 year (7621/15563) age brackets constitute 49 percent and 39 percent of the total male AIDS cases respectively in India, the proportion contributed by females in female AIDS cases had a reverse distribution. Fifty percent of the total female AIDS cases were in 15–29 year (2360/4741) and 37 percent (1692/4741) in 30–44 year age group. Of all the reported AIDS cases

for 15–44 year old individuals, women constituted a significantly higher percentage of AIDS cases – compared to males – in the age range of 15–29 years. This is an important indicator of the likely impact of the epidemic on households and communities, especially children.

It is worth noting here that some studies from the states with generalized epidemic such as Tamil Nadu – indicated that marriage itself is a risk factor for many Indian women for contracting HIV; for example a study reported a HIV prevalence of 4 percent among housewives in rural setting.

States with generalised HIV epidemic

In this category are included Maharashtra, Tamil Nadu, Karnataka, Andhra Pradesh, Manipur and Nagaland where HIV prevalence has reached 1 percent in antenatal clinic attending women representing female general population.

Concentrated HIV epidemic States

HIV has infected more than 5 percent of the population groups observing high-risk behavior in these states but the prevalence in female general population has remained below 1 percent. Gujarat, Goa, Pondicherry, Mizoram and West Bengal fall in this category

Low HIV epidemic

Remaining states and union territories fall in this category where the population groups observing high-risk behavior is yet to attain a 5 percent prevalence of HIV

The impact of the epidemic is likely to be felt on all sectors – households, communities, industry, agriculture, health as well as the government. A study that looked at the economic impact on individuals who were HIV positive (Gupta 199811) indicated that the group on an average spent between 10 to 30 percent of their annual incomes on HIV-related health expenditures, with the bulk of expenditures being on drugs and medicines.

While the prevalence of HIV in India may seem relatively low – 0.7 percent of the general adult population compared with rates of over 20 percent in South Africa, Zimbabwe and Botswana – the infection has now been detected in all the states and union territories. It is no longer confined to vulnerable groups such as sex workers and transport workers, or to urban areas³³, and here lies the necessity for urgent scaled up responses for prevention of further spread of HIV.

The Government of India responded to the epidemic by setting up the National AIDS Control Program, The National AIDS Control Organization (NACO) responded by putting in place a the National AIDS Control Program (NACP) – a fully Centrally- sponsored scheme – which comprised Surveillance, Program Management, Information, Education and Communication (IEC), Blood Safety, Condom Promotion, Control of STDs, and Clinical Management.

In addition to the government and national and international donors and NGOs, the private sector in India has also made its presence felt in HIV prevention activities.





The Human Immunodeficiency Virus

●● Prof. Dr Kanan Yelikar
Aurangabad

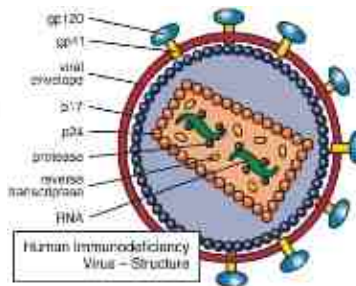
●● Dr. Jyoti Iravane
Aurangabad

Introduction

AIDS (Acquired Immunodeficiency Syndrome) was first recognised as a new and distinct clinical entity in 1981. Human Immunodeficiency viruses (HIV) belong to the class Retroviruses and family Lentivirinae. Two types are recognised HIV-1 and HIV-2. Both differ in geographical distribution, biological and molecular characteristics and extent of transmissibility. These viruses store their genetic information as ribonucleic acid (RNA). RNA must be converted to DNA by a special enzyme reverse transcriptase. The strains of HIV-1 isolated from people in U.S.A. and Europe are genetically diverse from strains isolated in Africa and Asia.

Replication

Glycoprotein 120 of HIV binds to receptor/receptors on HIV permissive host cell. Predominant receptor is the CD4 molecule present on T lymphocytes and macrophages, though others such as galactosyl ceramide (gal C) have also been proposed. Receptors are molecules (proteins and or glycoproteins) present on the surface of host cells which facilitate the attachment and entry of viruses into the cell. Entry of virus into the host cell requires certain cellular co receptors/factors e.g. CCR-5, CXCR-4, CCR-2 and CCR3 etc designated collectively as cell infectivity factor (CIF). CIF may be a co receptor or enzyme helping in virus interaction with host cell. Most convincing candidate is the chemokine receptor related protein, fusin (CXCR-4). Once the gp41 of the virus fuses with the host cell membrane the capsid is uncoated and a ribonucleoprotein complex capable of reverse transcription is formed. During the process of reverse transcription cDNA is formed under the effect of viral enzyme, the reverse transcriptase. This integrates with the host DNA. The integrated virus is called provirus. The virus may not be expressed in many cells and is considered latent. Virus expression can be stimulated by many viral, cellular and exogenous factors. Other, co-existent viral infections e.g. CMV, herpes virus etc. can make the non permissive cells permissive. Maturation of virus also takes place after virus assembly and budding.



Sterilization

- ♦ Autoclaving at 121°C, 15 lbs pressure for 20 minutes.
- ♦ Dry heat 170°C for 1 hr.
- ♦ Boiling for 20-30 minutes.

Chemical Disinfection

- ♦ Sodium hypochlorite : 5gm/litre. (0.5 to 1% ordinarily, 5-10% for high organic matter content e.g. discarding tissues etc.)
- ♦ Calcium hypochlorite : 1.4 gm/litre.
- ♦ Chloramine : 20gm/litre (Available chlorine 0.1%)
- ♦ Ethanol : 70%

- ♦ Formalin : 3-4%
- ♦ Glutaraldehyde : 2% for 30 minutes
- ♦ Polyvidone iodine (PVI)

Transmission

Risk factors for HIV infection include multiple homosexual or heterosexual partners; contaminated blood transfusion; injections with contaminated needles and syringes and infected mother to foetus/infant, (before, during or shortly after birth). The efficiency of transmission of HIV is determined by the amount of virus in a body fluid and the extent of contact. High concentrations of free infectious virus and virus infected cells have been reported in blood, genital fluids and cerebrospinal fluid. Breast milk and saliva yield varying numbers, whereas, other body fluids have a low viral content. High levels of virus are always associated with symptoms and advanced disease.

Saliva in adults contains some nonspecific inhibitory substances like fibronectins and glycoproteins which could prevent cell to cell transfer of virus. Thus, saliva is not a likely vehicle of transmission. Urine, sweat, milk, broncho-alveolar lavage fluid, amniotic fluid, synovial fluid, faeces and tears have been reported to yield zero or a few HIV particles. Hence, these vehicles also do not appear to be important in virus transmission.

Breast milk at the time of primary infection in a feeding mother has a high content of virus and may transmit the infection to the baby. Cerebrospinal fluid (CSF), on the other hand, also has a high content of virus particularly in individuals with neurological disease, but, CSF is not a natural source of virus transmission.

Progression of HIV

1. Acute seroconversion
 - Fever, rash and adenopathy
 - Usually 3-6 weeks after exposure
2. Asymptomatic HIV (clinical latency); 8-10 yrs
 - Patient often unaware of infection, antibodies detectable
 - Immune system able to control virus to limited extent and CD4 > 350/cu.mm
 - Able to transmit HIV to others
3. Symptomatic HIV
 - Minor to moderately severe symptoms
 - Recurrent symptoms
4. AIDS
 - Severe immunosuppression associated with opportunistic infections or cancers

Laboratory investigations for HIV infection

- (i) Antibody detection: Blood / Serum / Plasma
- (ii) Antigen detection
- (iii) Virus isolation
- (iv) Other tests :
 - a) Detection of p24 antigen: It is expensive and done in following situations.
 - b) Polymerase chain reaction (PCR)
 - c) Viral load assay
 - d) Surrogate markers
 - e) Indirect predictors of HIV infection

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Universal HIV Testing and Counseling

•• Dr Sadhna Tayde
Assistant Director MSACS

Today, approximately 80% of people living with HIV in developing countries do not know that they are HIV-positive. Recent surveys in sub-Saharan Africa showed on average just 12% of men and 10% of women have been tested for HIV and received their test results. (WHO & UNAIDS New Guidance on HIV Testing and Counseling 30th May, 2007)

Increased access to HIV testing and counseling is essential to promote early diagnosis of HIV infection. Early information on HIV will help to prevent HIV transmission to others and remain uninfected as well as facilitate early treatment, care and support.

What is counseling?

Counseling is defined as a helping process where one person explicitly and purposefully gives his/her time, attention and skills to assist the client to explore their situation, identify and act upon solutions within the limitations of their given environment.

HIV Counseling

Counseling and testing services are an entry point to comprehensive HIV/AIDS care. Effective Counseling and testing programs can help patients identify-and limit-behaviors that increase the risk of HIV infection or transmission to other. Hence it is essential to provide counseling and testing to all women of childbearing age, pregnant women & their spouse or partner for prevention of Parent to Child Transmission and that can be integrated into antenatal, intrapartum and health facilities where pregnant women come for health check-up. Educating and counseling pregnant women about HIV infection helps them remain uninfected and prevent transmission to child.

The steps in HIV counseling are

Informed Consent: It is a process of providing oral or written information on HIV risk and benefits of testing and implications of HIV test results so as to help client to take decision whether to undergo HIV testing or refuse to do so.

HIV pre-test counseling

Client to be educated on HIV transmission, sources, prevention, PPTCT, STIs and HIV, HIV-testing processes, benefits and risks of HIV testing, Maintaining confidentiality, Implications of both positive and negative test results, Identification of supportive HIV services like ARV Prophylaxis and breastfeeding counseling, Individual counseling and risk assessment

The two types of counseling & testing are

- 1) Provider initiated counseling and testing - Opt out
 - 2) Client initiated counseling and testing- direct walk in - Opt in
- 1) Opt-In- Women who "opt-in" explicitly request to be tested, and their informed consent-written or oral-is clearly established. The opt-in approach requires an active step by the individual woman to agree to be tested.
 - 2) Opt-out - The opt-out approach emphasizes that HIV testing is an expected part of ANC. However, testing is still voluntary under the opt-out approach-women have a right to refuse testing.



Preferred strategy is-Opt-out

WHO, CDC and USAID recommend the opt-out strategy because it helps normalize HIV testing by making it a routine ANC component. This approach also is more likely to increase the number of women who get tested for HIV. The PPTCT program in India used the 'Opt out' model in the first phase of the program and continues to do so.

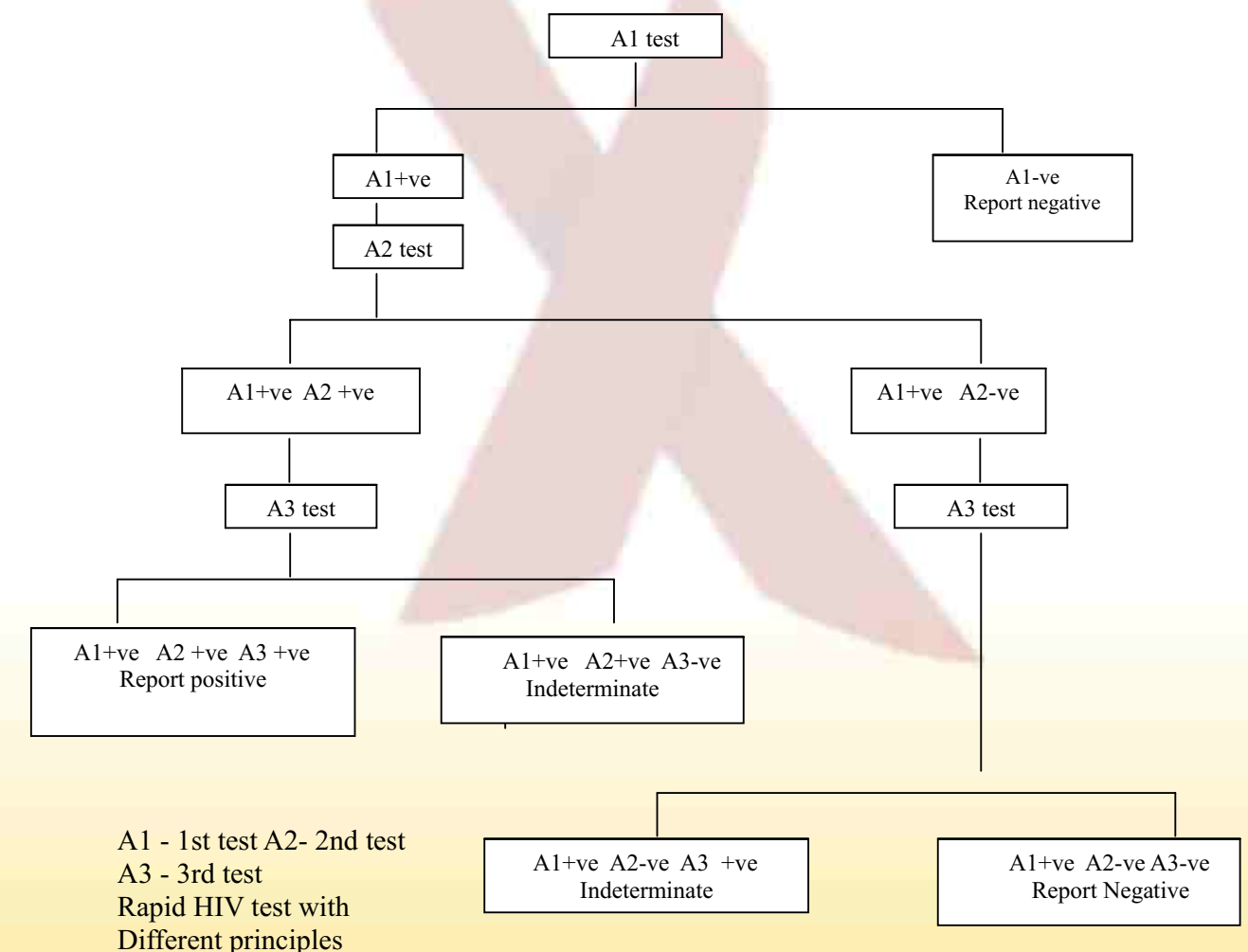
Overview of HIV testing

HIV testing detects antibodies or antigens associated with HIV in whole blood, saliva, or urine. Blood sampling is the most common mode of testing. The results of different tests can be combined to confirm HIV test results.

When properly administered, HIV tests offer a high degree of sensitivity and specificity. Tests that produce positive results (infection is present) are truly positive, and tests that produce negative results (there is no infection) are truly negative. However, people who administer or handle HIV testing should be thoroughly trained so that the accuracy of testing is preserved.

The testing protocol adopted by National Policy is as follows:-

National strategy/Algorithm of HIV testing in PPTCT & ICTC 3 Rapid Tests having different principles



Since maternal antibodies cross the placenta, all infants born to HIV-infected mothers will be antibody positive irrespective of their own infection status. Therefore, HIV antibody testing of HIV -exposed infants should be performed at 18 months. Viral assays that detect HIV in the infant's blood, such as the DNA or RNA PCR test, can be used to diagnose HIV infection at the age of 6 weeks. Early diagnosis of HIV allows the provider to promptly initiate counseling about methods of infant feeding and facilitates early clinical and therapeutic care for the HIV-infected infant.

Post-test Counseling : Here the client is helped to understand and cope with the HIV test results.

In case of a negative test result, the counselor re-educates the client on basic HIV AIDS and assists the client to bring change in behavior so as to reduce the risk of getting infected with HIV in the future. In case the client is in the window period, a repeat test is recommended. The clients with specific complaint are referred to respective health facility.

In case of a positive test result, the counselor assists the client to understand the implications of the positive test result and helps in coping with the test result. The counselor also ensures access to treatment, care and supports disclosure of the HIV status to the spouse.

During post-test counseling re-emphasis is given on institutional delivery, ARV Prophylaxis to mother and baby so as to prevent infection to child. Client should be educated on medical termination of pregnancy, breastfeeding, importance of regular follow up and immunization of the baby. For early diagnosis HIV testing of baby at 6 weeks, 6 months, 12 months and 18 months is recommended.

Follow-up counseling: During follow-up counseling it is ensured that the client has adequate information on safe sexual behavior, PPTCT programme and other care and support services including ART, nutrition, home based care and legal support available for HIV infected patients

Couple Counseling

In PPTCT Programme to prevent blame on one partner it is very essential to motivate the partner or spouse for testing. One of the most important objectives of HIV AIDS counseling is to provide psychological moral and social support to the couple and bring a behavioral change so as to prevent future infection.

In some cases, cultural factors will limit sexual activity during pregnancy and the postpartum period, leading men to seek other partners. Counseling male partners of pregnant women provides an opportunity to encourage men to practice safe sex by using condoms and by being monogamous. The risk of transmitting HIV to the infant is very high if her partner infects the mother during pregnancy. Through counseling, programs can emphasize the man's responsibility for protecting the health of his wife or partner and their family (Population Council and UNFPA,2002)

Effective couple counseling will depend on establishing a relationship with each partner, adequate information on HIV/AIDS, avoid allowing one person to dominate the conversation, detail about testing process, and patient suggestions on receiving test results. The couple should be counseled about discordant results (the woman might be infected while the man is not or vice-versa), and explore the possible reasons for such a discrepancy (including the "window period").

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Human Rights Issues

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Warangal

Why are human rights important in the context of HIV/AIDS?

The global HIV/AIDS pandemic cuts across all barriers of nationality, religion and gender. Human being is a social animal and during the interaction with the community lot of ethical, legal and moral issues need to be addressed, which need debate vis-à-vis human rights in HIV/AIDS. These issues are-Universal screening of antenatal women for HIV, Mandatory screening for HIV before marriage, Role of informed consent in HIV testing, Confidentiality of reports and partner notification about spouse status, Blood bank safety and screening for donors, Legality of MSM, Role of medical profession in encouraging stigma and discrimination towards HIV patients, Universal Right to access for ART services, Denial of employment, education to HIV +ve patients, Right to have safe delivery, Right to have children, Free legal and economic aid for PLHA, Special issues concerning women.

Human rights of a woman with HIV/AIDS:

More than 40% of the totals of HIV patients universally are women. Gender inequality, illiteracy, poverty, denial of medical care and nutrition, sexual abuse and violence economic dependency and epidemiologically being more vulnerable add up to human rights abuse in women. In children child abuse, malnutrition, MSM, illiteracy and poverty add up to human right abuses.

Human rights principles relevant to HIV/AIDS inter alias

Right to nondiscrimination and equality before law, Right to attain highest attainable standard of physical and mental health, Right to liberty and freedom of movement, Right to social security, assistance, welfare. Right to seek and enjoy asylum, Right to life, Right to privacy, Right to freedom of opinion, expression to fully receive and impart information, Right to work, Right to marry and start a family, Right to equal access to education, Right to adequate standard of living, Right to share scientific advancements and its benefits, Right to participate in public/cultural life, Right to be free from torture, criminal, inhuman or degrading form of punishment

Role of medical profession

The ethics committees have to devise a charter and code of conduct for practicing physicians to deal with HIV/AIDS patients & human rights abuses in the form of -

Denial of care & treatment to these patients, Stigma & discrimination in hospitals, Denial of specialist services to a women in labor, HIV testing without counseling or informed consent, Breach of trust, confidentiality about patient clinical diagnosis/lab status, Non compliance of universal precautions and biomedical waste disposals, Not having a policy for post exposure prophylaxis in the hospital for the staff members.

What needs to be done in the protection of human rights for HIV/AIDS patients?

Concerted team efforts at every level from community to committee of nations, Special focus on women's rights in all spears to be protected preserved with social and economic empowerment. Protect rights of prisoners and children, Access to free legal aid for every PLHA. Sensitize the medical profession and have a code of conduct for them to deal with HIV/AIDS patients. Promote adolescent health services with good nutrition for the girl child. Fight a sustained battle against gender discrimination of women and strengthen



PNDT act. Strengthen PPTCT services with out reach workers. The political class to be sensitized by orientation programs in assemblies and parliament on HIV/AIDS human rights. If necessary amend criminal/civil code for justice to people living with HIV/AIDS.

Regulatory authority blood banks and organ donation banks to be strengthen. All doctors should be trained in medical ethics and human rights issues..

What needs to be done in the protection of human rights for HIV/AIDS patients

- ◆ Concerted team efforts at every level from community to committee of nations,
- ◆ Special focus on women's rights in all spears to be protected preserved with social and economic empowerment.
- ◆ Protect rights of prisoners and children
- ◆ Access to free legal aid for every PLHA.
- ◆ Sensitize the medical profession and have a code of conduct for them to deal with HIV/AIDS patients.
- ◆ Promote adolescent health services with good nutrition for the girl child.
- ◆ Fight a sustained battle against gender discrimination of women and strengthen PNDT act.
- ◆ Strengthen PPTCT services with out reach workers.
- ◆ The political class to be sensitized by orientation programs in assemblies and parliament on HIV/AIDS human rights.

Conclusions

- ◆ Human rights issues are important in the context of reducing stigma, discrimination of HIV patients in the community,
- ◆ All the rights enumerated in the UN charter be respected especially about gender equality.

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HIV Tests – When & How?

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HIV/AIDS unlike other infections is life long, fatal & no cure or vaccine is available for treatment. Anyone attempting to assess HIV status of an individual must be conversant with strategies of HIV testing, protocols of testing, rationale of using test kits, counseling technical pitfalls & quality assurance etc. The important thing is - the only method of determining the HIV infection status of an individual during the long asymptomatic status is laboratory diagnosis. Utmost care has to be taken in prescribing a test, its interpretation and its consequences.

Objectives of testing

Testing is done for various purposes –monitoring the severity of the problem in a population, testing of blood or tissues, diagnosis or voluntary testing and for research purposes. A complete list is

1. Blood and blood product safety.
2. Donors of sperms, organs and tissues.
3. Sentinel surveillance to monitor epidemiological trends.
4. Diagnosis of HIV infection in clinically suspected cases.
5. Voluntary testing of individuals practicing high risk behaviour
6. Testing of antenatal cases to prevent mother to child transmission (after counseling & consent)
7. Research

General Principles of Testing

Testing should be a part of prevention and/or care strategy. The testing should be of quality and appropriate to the situation in which it is being done. The process has to be cost effective and quality assurance has to be maintained. Testing should be preceded by pre test counseling and informed consent. All clients should receive post test counseling and confidentiality should be ensured.

Testing Procedures

This is done in 3 forms – unlinked anonymous, voluntary and confidential and Mandatory. Mandatory is not to be followed. Tests to detect specific antibodies can be classified into SCREENING TESTS & SUPPLEMENTAL Tests. Screening tests are done to screen blood & blood products & for surveillance. Supplemental Assays are undertaken to confirm HIV infection status of an asymptomatic individual and has h/o high risk behaviour. Screening assays are highly sensitive and may give false +ve reactions whereas supplemental assays are sensitive and specific and performed to rule out false +ve reactions.

Strategies of HIV testing in India

There are 3 strategies for testing which are used in different scenarios. In strategy 1, only a single test is performed. In strategy 2, all samples found +ve are retested on another kit. In strategy 3, all samples found



+ve on sequential testing on two different kits are retested on a third kit. (All kits involved are for antigen based testing – rapid, simple, ELISA) Kits chosen for subsequent testing should involve a different technique and antigen. The testing technique is such that the test of highest sensitivity is used for the first test, and subsequent tests should have a higher specificity. All tests are done on the same sample.

Strategy 1

The test result is declared based on one ELISA test – in blood or tissue safety. This is only to protect the recipient and not for diagnosis of the donor.

Strategy 2

All samples found +ve on the first test are to be retested on different ELISA kit. The result on the second test decides true and false positivity. This is used for sentinel surveillance and for diagnosis in symptomatic individuals.

Strategy 3

All samples found +ve on two sequential tests on two different kits is subjected to a third test. If the third test also yields a positive result, the individual is diagnosed as being HIV infected. If the third test is negative, the test is reported as equivocal and retesting should be done either by Western Blot or retesting by the same strategy after 3-6 months. This approach is to be used for diagnosis of asymptomatic patients.

There are many ELISA kits available for this purpose and each has its advantages. There can be false positives requiring repeated tests for confirmation. It is worth reiterating that there is still a need to confirm all +ve results on a more specific test.

Testing of PLHA to help the long term management includes CD4 counting and viral load estimation. Various methods have been developed for this and all have their merits. The commonly used methods for viral load estimation are either the Reverse Transcriptase Polymerase Chain Reaction (RT PCR) or the branched DNA (b-DNA) assay. Both methods are reliable although b-DNA assay gives higher results than the RT PCR.

CD4 estimation can be done by many methods, although the most common method is flow Cytometry. Newer low cost techniques are always validated against Flow Cytometry results. Even within the domain of CD4 measurement there can be significant variations.

Other Laboratory tests to be done if HIV positive:

Complete blood count, Chemistry profile, Transaminase levels, BUN and creatinine, Urinalysis, RPR or VDRL, Tuberculin skin test, Toxoplasma IgG, Hepatitis A, B and C serologies, PAP smear, Fasting blood glucose and serum lipids (if risk factors for heart disease)

Summary

It is important to ensure that prior to interpreting CD4 result, patient should be chosen correctly, sample is appropriately collected and correct lab procedures should be followed. NACO recommends that flow Cytometry should be used as the ideal method as CD4 estimation. Although nucleic acid estimation is available, it is very expensive and needs infrastructure and skill. False +ve reports can be due to lab error, cross reacting antibodies, IV drug abuse, recent immunization & multiple pregnancies. One may receive false negative report during window period, advanced disease and lab/clerical error.

In Health care settings, routine testing is not required. Universal precautions should be followed and voluntary testing with appropriate counseling should be encouraged

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Antenatal Management of Hiv Positive Mothers

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Professor and unit head, Seth G.S. Medical College and K.E M. Hospital, Mumbai.

•• Dr. Amruta Kumthekar

Lecturer

With the introduction of HAART (Highly Active AntiRetroviral Therapy) and its wonderful efficacy, more adult women than ever are living with HIV! 15.4 million women worldwide are reported to be infected with the virus.¹ The majority of these women are in their reproductive years and may become pregnant. The advent of effective antiretroviral drugs has provided tremendous opportunity for the management of HIV positive pregnant women.

Goals of management of HIV positive woman during pregnancy

- A. General antenatal care of pregnant woman
- B. Special care considering her HIV positive status
- C. Strategies to reduce risk of mother to child HIV transmission

A. General care of HIV positive pregnant woman

Early antenatal registration and regular visits
Tetanus immunization
Iron, folate and calcium supplementation
Obstetric ultrasonography including anomaly scan
Blood grouping and Rh typing
Screening for syphilis, HBsAg
Screening for gestational diabetes mellitus

B. Special care considering her HIV positive status

Screening for other genital tract infections in HIV positive mothers should include tests for Chlamydia trachomatis, Neisseria gonorrhoeae, and bacterial vaginosis.

A detailed ultrasound scan for fetal anomalies is important after first-trimester exposure to HAART and folate antagonists used for prophylaxis against PCP, though recent data² are reassuring with respect to teratogenicity.

Plasma viral load and CD4 T-lymphocyte measurements should be reviewed periodically by the HIV physician and advice should be given as to the choice and timing of anti-retroviral therapy and the need for prophylaxis of Pneumocystis carinii pneumonia (PCP).

Patient management by multidisciplinary team and counseling should include HIV physician, obstetrician, pediatrician, and may also include a psychiatric team and support groups.

C. Strategies to reduce risk of mother to child HIV transmission

Women should be informed that interventions can reduce the risk of mother-to child HIV transmission



from 25-30% to less than 2% & these interventions are Anti-retroviral therapy, given antenatally and intrapartum to the mother and to the neonate for the first 4-6 weeks of life, Delivery by elective caesarean section 3 & Avoidance of breastfeeding.

Recommendations for Prescribing Anti-Retroviral Therapy

Antiretroviral therapy in HIV positive pregnant mothers may be given for -

1. Mother's own health benefit
2. Prevention of mother to child HIV transmission

There is clear consensus that women who require HAART for their own health should receive this during pregnancy, both benefiting them, and reducing mother to child transmission. Where therapy is not required for maternal health, combinations of three or more drugs to suppress HIV replication may be prescribed in the short term. Monotherapy may be an alternative in this group of women if they are also willing to have a prelabour caesarean section. The efficacy of this approach in reducing mother-to-child transmission comes from observational cohorts⁴ and is supported by a recent Cochrane review.⁵

Antiretroviral drugs and their potential side effects in pregnancy

Nucleoside reverse transcriptase inhibitors are-Zidovudine(ZDV), Lamivudine(3TC), Didanosine (ddI), Stavudine (d4T), Abacavir (ABC)

Generally well tolerated, but there are reported cases of anemia, nausea, vomiting, elevated transaminase level, hyperglycaemia and lactic acidosis

Non-nucleoside reverse transcriptase inhibitors are

1. Nevirapine(NVP), Delavirdine, Efavirenz

Generally well tolerated. May lead to deranged liver function and rash.

Protease Inhibitors are

1. Indinavir, Saquinavir, Ritonavir, Nelfinavir

Side effects include hyperglycaemia, new onset diabetes, exacerbation of existing diabetes and diabetic ketoacidosis, diarrhea, nausea and vomiting, altered taste and deranged liver function.

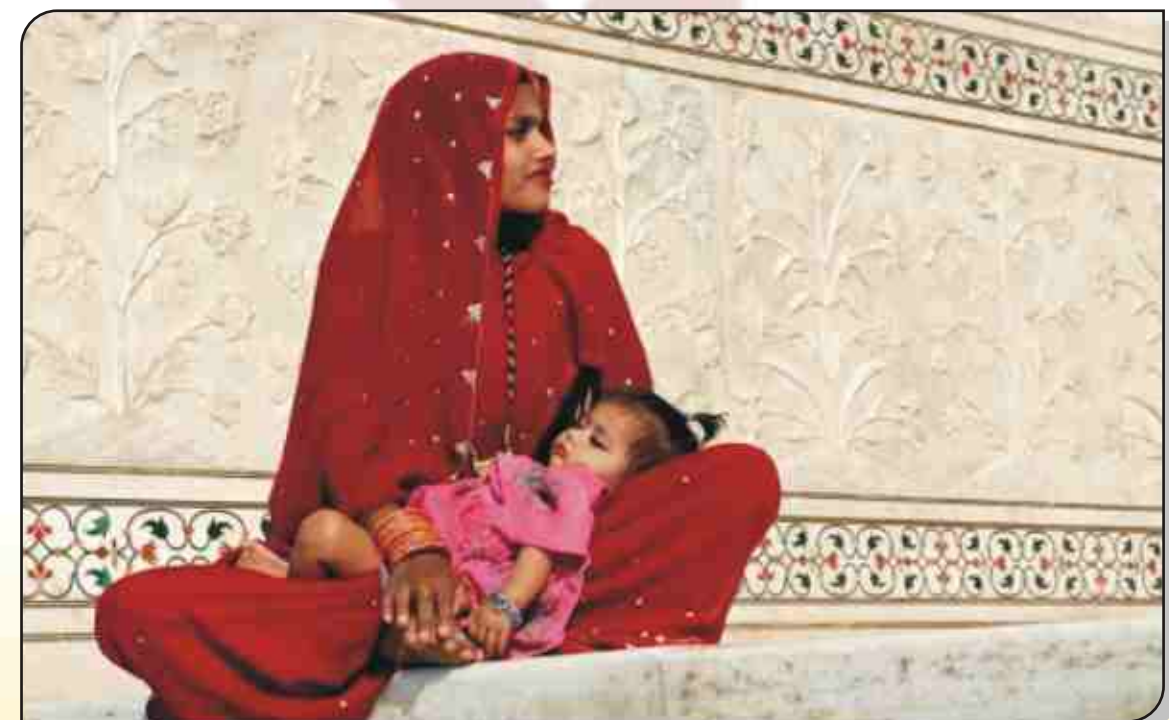
Guidelines for starting antiretroviral therapy in pregnancy

- 1) HAART (3 drug) combination therapy is indicated for maternal health as per adult guidelines
 - if baseline maternal viraemia is >10 000 copies/ml
 - if baseline maternal viraemia is <10 000 copies/ml as an alternative to zidovudine monotherapy/ prelabour caesarean section
 - if drug resistance is detected in genotype or phenotype Avoid nevirapine as part of combination therapy if CD4 count is > 250 × 10⁶ cells/l
- 2) HAART started before conception should be continued throughout pregnancy
- 3) Zidovudine ('ZDV') monotherapy is a valid option for women who are willing to deliver by prelabour caesarean section and with <6–10 000 HIV RNA copies/ml plasma with wild-type virus not requiring HAART for maternal health not wishing to take HAART in pregnancy
- 4) Stavudine plus didanosine avoid as NRTI backbone whenever possible
- 5) Short-term HAART for prevention of mother-to-child transmission and not requiring HAART for maternal health discontinue this after delivery when viral load <50copies/ml Consider a detailed anomaly ultrasound examination at 21 weeks for all women taking antiretroviral therapy in pregnancy



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Intranatal Management of HIV Positive Women

•• Prof. Alokendu Chatterjee FRCOG
 Prof. Partha Mukherjee, MD
 A/Prof. Sebanti Goswami

Introduction

The world as well as the Indian statistics shows that there is a shifting trend of the HIV epidemic towards women and young people. This is resulting in increasing seroprevalence amongst the women in the reproductive age group and therefore enhancing the mother to child transmission (MTCT). In the absence of any intervention the risk of such transmission is 15–30% in non-breastfeeding populations. Breastfeeding by an infected mother increases the risk by 5–20% to a total of 20–45%. As 90% of pediatric infections result from vertical transmission¹, adoption of various strategies for interruption of this transmission is a definitive step towards prevention of parent to child transmission PPTCT.

The transmission of HIV from an infected mother to her child can be decreased to <2%² by intensive interventions in the antenatal, intranatal and postnatal period. Since transmission during the peripartum period accounts for one-third to two third of overall transmission rate³, the intranatal management of HIV positive women has become an important focus of PPTCT.

Intranatal management

The goal of intranatal management of HIV positive women is both to minimize the risk for perinatal transmission and potential for maternal and neonatal complication. The intranatal management of HIV positive women can be discussed under following heads:

- 1) Antiretroviral (ARV) drugs during labor or delivery
- 2) Mode of delivery
- 3) Avoidance of certain obstetric practices
- 4) Adopting standard infection prevention practices

I) ARV during labor or delivery

The results of PACTG 0764 trial and subsequent epidemiologic studies have proven the efficacy of the three part Zidovudine (ZDV) prophylaxis regimen alone or in combination with other ARV agents; the PACTG 076 ZDV regimen includes a continuous i.v. infusion of ZDV during labor (initial loading dose of 2mg/kg over one hour followed by continuous infusion of 1 mg /kg /hr till delivery). No doubt it is a very effective option for PPTCT but neither cost effective nor available in resource poor settings.

WHO recommends⁵, women receiving ZDV 300mg twice daily since 28 weeks should continue it during labor with addition of 150mg Lamivudine(3TC) and single dose Nevirapine 200mg at the onset of labor and continuation of ZDV and 3TC for seven days postpartum to prevent development of resistance to Nevirapine(NVP).

In the resource poor settings that do not currently have the capacity to deliver this recommended prophylactic regimen to prevent MTCT, the absolute minimum is to implement the single dose Nevirapine (200mg) to the mother at the onset of labor or three hours before LSCS and single dose NVP(2mg/kg) to the baby within 72hrs of birth. This is also as per NACO guidelines.

II) MODE OF DELIVERY

The ACOG's Committee on Obstetric Practice has issued a Committee Opinion concerning route of delivery, recommending consideration of scheduled cesarean delivery (cesarean delivery prior to labor and rupture of membranes) for HIV-infected pregnant women with HIV RNA levels >1,000 copies/mL near the time of delivery. For women who have HIV RNA <1,000 copies/mL, the data regarding the benefit of scheduled cesarean delivery are insufficient to draw definitive conclusions; therefore, decisions regarding mode of delivery should be individualized. Women in these circumstances should be carefully counseled regarding the uncertain benefit and known risks of scheduled cesarean delivery. Pregnant women receiving HAART (Highly active antiretroviral therapy) have transmission rates of 1.2% to 1.5%, unadjusted for mode of delivery. Given the low transmission rates among women on HAART, the benefit of scheduled cesarean delivery is difficult to evaluate.

According to NACO guidelines, unless mother's viral load is suppressed, HIV transmission to baby is generally higher with vaginal delivery than Cesarean section if performed electively. However, maternal mortality, cost, and skill level is so much higher than vaginal delivery, that LSCS is often difficult in many settings in India.

Special precautions should be adopted during LSCS:

- a) Preferably done by a senior member of the team
- b) Movements should be slow
- c) Safe zones should be used while passing of sharps
- d) Safe gear and safe technique are the keystones

III) MODIFIED OBSTETRIC PRACTICES:

- a) Minimize p.v. examination
- b) Avoid prolonged labor
- c) Reduce the interval of time from rupture of membranes to delivery (i.e. avoid early artificial rupture of membranes)
- d) Avoid routine episiotomies Operative delivery with forceps or vacuum extraction should be performed only in selected circumstances.
- e) Avoid invasive fetal monitoring
- g) In cases of PPH in women receiving a Protease inhibitor or Efavirenz, methergine should not be used unless alternatives (e.g., prostaglandin F 2 alpha, msoprostol, or oxytocin) are not available as the concomitant use exaggerates the vasoconstrictive response.⁸ If there are no alternative medications available and the need for pharmacologic treatment outweighs the risks, methergine should be used in as low a dosage and for as short a duration as possible.
- h) Overall cleansing with Chlorhexidine has not been found to reduce MTCT however when there has been prolonged rupture of membranes (>4hrs) this intervention may have some benefit.
- i) After delivery all the maternal blood and amniotic fluid should be removed from the infant promptly.
- j) The umbilical cord is to be clamped quickly and preferably cut under cover of a gauze.

IV) ADOPTING STANDARD PRECAUTIONS FOR INFECTION PREVENTION

Standard precautions for infection prevention should be followed while caring for all women during labor or delivery. This includes protective gear, sterilizing instruments and proper disposal of contaminated material and sharps.



CONCLUSION

It is imperative that every HIV infected pregnant woman should get access to proper care during intranatal period. It is also imperative that all health care providers must receive proper protection while looking after and delivering these women. Under no pretext HIV infected women are to be treated as 'untouchables'. Great strides in the treatment have led to a remarkable reduction in perinatal transmission. Adoption of universal precautions for infection prevention and modification of certain obstetric practices can ultimately reward us with a favorable outcome.

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National Guidelines on PPTCT

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J R

Parent to child transmission (PPTCT) or Vertical transmission is the second most common mode of transmission of HIV infection in India, accounting for 3.8% of all HIV transmission. Globally, 5 % of all HIV infection is due to mother to child transmission. More than 90% of infections in children are due to mother to child transmission (MTCT). Estimated prevalence rate of HIV infection among pregnant women is 0.3% and about 1 lakh HIV infected women deliver each year in India. This risk can be reduced to less than 2% with various therapeutic & preventive interventions

NACO has a three-pronged strategy for the PPTCT

- 1) **Primary prevention of HIV among men & women of childbearing age**
- 2) **Prevention of Unwanted Pregnancies among HIV positive women**
- 3) **Prevention of PPTCT.**

1) Primary prevention

It focuses on preventing HIV among women and men of child bearing age. This can be achieved as part of a general population based HIV prevention strategy as:-

- a) Promoting condoms through social marketing & community-based distribution system
- b) Behavior change communication (BCC) and social mobilization campaigns
- c) Prevention, diagnosis, and treatment of sexually transmitted infections (STIs)

2) Preventing unwanted pregnancies in HIV infected women

Safe strategy requires provision of voluntary, confidential counseling and testing (VCT) services and effective contraception, sterilization, or abortion services as needed. HIV positive women should have complete choice in making decisions regarding pregnancy and childbirth. Proper counseling should be provided to women to enable her to make an appropriate decision either to continue the pregnancy or terminate the pregnancy.

3) Promote interventions to prevent PPTCT

Comprehensive maternal and child health services (antenatal, postnatal, and child health), VCT, antiretroviral (ARV) prophylaxis, counselling and support for safe infant feeding and optimal obstetrical practices.

Interventions to prevent PPTCT are -

- A) Preconception care
 - B) Obstetric interventions
- a) Ante partum Interventions
 - b) Intrapartum Interventions



1) Institutional delivery

Increasing the institutional delivery rate is the most important intervention for PPTCT.

2) Mode of delivery

NACO recommends normal delivery unless the woman has obstetric reasons for LSCS. Elective LSCS is NOT considered a standard PPTCT intervention. This is because the risk of LSCS in a HIV infected woman (wound infection, dehiscence) and risk to healthcare workers are not well understood although it reduces MTCT to some extent.

3) Antiretroviral Therapy**c) Postpartum Interventions**

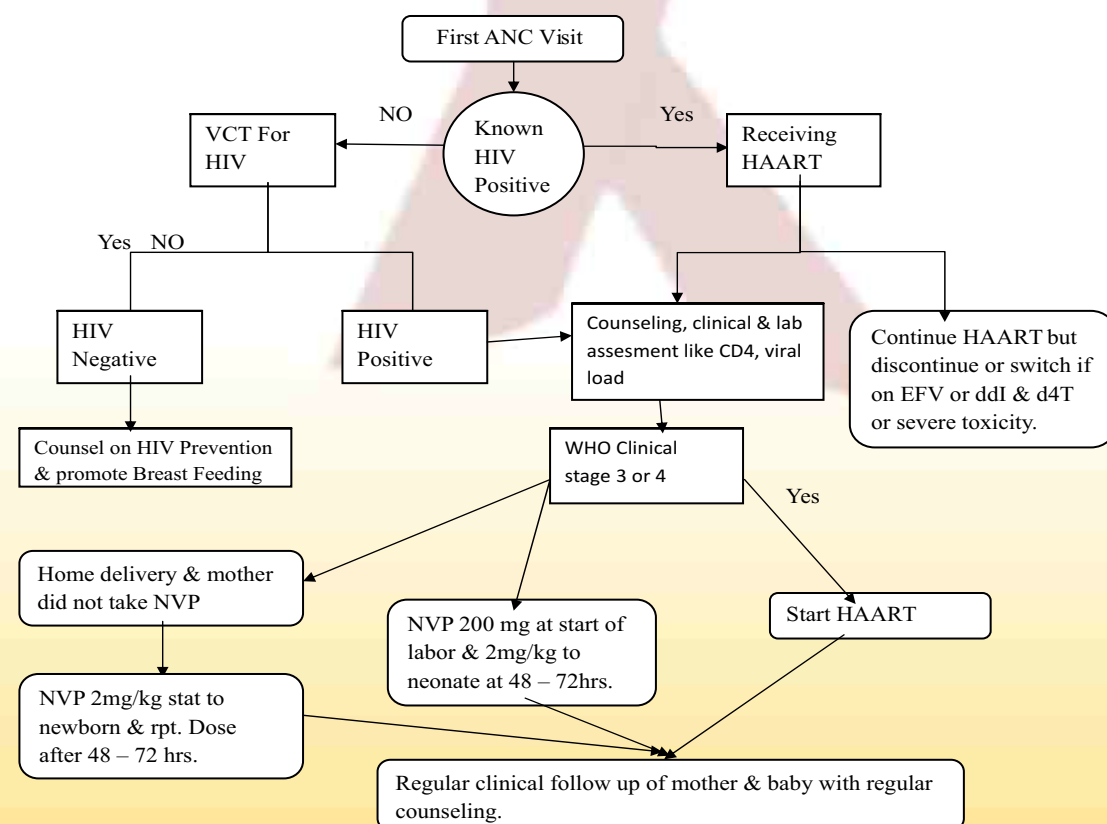
ARV (Antiretroviral) interventions

Indications for ARV in pregnancy include

- For maternal health – clinical stage 3 & 4 disease, to be continued postpartum
- For preventing PPTCT – Prophylaxis, can be stopped postpartum

GOI (Government of India) guidelines for PPTCT ARV

- Single dose of Nevirapine (NVP) - 200mg, for all pregnant HIV positive women is given at the onset of labour and single dose of syrup NVP 2mg/kg weight to the baby within 72 hours of birth. This regimen was found to decrease the risk of transmission to 13.1% in women who breast fed their babies.
- If women delivers within 2 hours of administering NVP, the baby needs syrup NVP 2mg/kg soon after delivery and a second dose at 72 hours of age.
- If a woman gets NVP and the labour turns out to be false labour, there is need to repeat NVP only if she does not deliver in the next seven days.

Algorithm For ARV Use in Pregnant Women :-**NACO Guidelines for Breast feeding**

Proper Counselling of parents regarding the benefits & risks of breast feeding is important, keeping in mind the resource setting, & personal familial cultural concerns.

- When replacement feeding is acceptable, feasible, affordable, sustainable and safe, avoidance of all breastfeeding by HIV-infected mothers is recommended.
- Otherwise, Exclusive breastfeeding is recommended during the first months of life, with early abrupt weaning at 4 - 6 months of age.
- Expressed breast feeding is preferred over direct breast feeding as EBF decreases BMT.
- Mixed feeding is contraindicated as there is maximum risk of transmission

All these interventions will reduce PPTCT from 30-45% to <2 %.





Post partum management of HIV infected women

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Antenatal and Intranatal management of the HIV infected women are mainstay of the prevention of the mother to child transmission. However, post natal management is also of great importance in view of maternal and child care during this phase. Post partum transmission occurs in less than 5% of cases. Ideally, counseling regarding ARV and other factors should occur well before delivery. The mother needs maximum support in post partum phase when she has to take care of her baby in addition to her own health and may be totally unsupported by her family.

Comprehensive care and support services are particularly important for women with HIV infection and their families, who often face multiple social and medical challenges. Post partum care services can be broadly grouped as follows

1. postpartum care of mother
2. pediatric care
3. HIV specialty care
4. family planning services
5. mental health services
6. substance abuse treatment
7. support services

Post partum care

Post partum care should be similar to seronegative women with a more vigilant watch on development of sepsis, flare up of tuberculosis and other infections. The sero positive women are more vulnerable for puerperal sepsis. Although the place of prophylactic antibiotics for the prevention of postpartum infectious morbidity is well-established among patients who have cesarean deliveries,¹ there is insufficient evidence to support their routine use in operative and non-operative vaginal deliveries.²

In a double-blind, randomized trial from South Africa³, pregnant women who were infected with HIV in whom vaginal delivery was anticipated were randomized to receive either a single dose of cefoxitin (2 g) or placebo intrapartum. Signs of sepsis were evaluated within 72 hours and at 1 and 2 weeks postpartum. There was a 53% reduction in risk of postpartum endometritis in the cefoxitin group (95% confidence interval, 0.24-0.9). The use of prophylactic intrapartum cefoxitin in HIV-infected women reduces the risk of postpartum endometritis.

Pyrexia, mastitis, endometritis, infected episiotomy in vaginal deliveries, wound sepsis/gaping in cesarean deliveries are known morbidities in post partum phase, they should be promptly treated. Even though minor morbidities are significantly higher in cesarean deliveries in sero positive women as compared to seronegative women, there is no significant difference in major morbidities. Zidovudine use has been associated with a decrease in the maternal morbidity⁴

Maternal medical services and HIV specialty care during the postpartum period must be coordinated between obstetric care providers and HIV specialists. The postpartum period provides an opportunity to review and optimize women's health care; this should include assessing the need for prophylaxis against opportunistic infections, cervical cancer screening, and routine immunizations. This period also provides an opportunity to assess the need for behavioral health interventions, to re-emphasize the importance of safer sex practices.

Neonatal care

Neonatal care is very important and vital. If adequate care is not taken, then the efforts of antenatal and intranatal prevention of spread would go waste. Breastfeeding is not recommended for HIV-infected women in the United States, where safe, affordable and feasible alternatives are available and culturally acceptable. In India it may not be possible, but it must be remembered that Breast-feeding is contraindicated because it is associated with an additional 15- to 20-percent risk of HIV transmission.⁵

HIV specialty care

The decision whether or not to continue antiretroviral therapy after delivery will depend on the woman's nadir CD4 count, clinical symptoms/disease stage, presence of other indications for antiretroviral therapy, and patient and provider preference. Women with nadir CD4 counts <350 cells/mm³ and/or symptomatic HIV infection should be encouraged to continue antiretroviral therapy postpartum with no interruption. For women who began antiretroviral therapy with a nadir CD4 count ≥350 cells/mm³ for prophylaxis of transmission, the decision on whether to continue therapy after delivery should be made in consultation with her HIV provider, taking into account current and nadir CD4+ lymphocyte counts and trajectory, HIV RNA levels, and patient preference. For women who received an NNRTI drug as part of the antepartum regimen and who plan to stop antiretroviral therapy after delivery, consideration should be given to stopping the NNRTI and continuing the other antiretroviral drugs for a short period of time (e.g., 7 days) to decrease the risk of NNRTI resistance.

Family planning services

Contraceptive counseling is a critical aspect of postpartum care. Concerns regarding contraception in women who have HIV include possible promotion of disease progression, exacerbation of sequelae, increased risk of transmission, and interaction with antiretroviral therapies. Although condoms are universally recommended for prevention of STD/HIV transmission, the unintended pregnancy rate with condom use alone is high. Patient can be counseled for female condoms and DMPA injectable contraceptive or progesterone only pill if patient is compliant. Puerpera tubal ligation should be done in appropriate cases.

Mental health services

Mental health needs a special mention. Concerns have been raised about adherence to antiretroviral regimens during the postpartum period. Women should be counseled about the fact that the physical and psychological changes of the postpartum period, as well as the stresses and demands of caring for a new baby, might make adherence more difficult and additional support may be needed to maintain good adherence to their therapeutic antiretroviral regimen during this period. The health care provider should be vigilant for signs of depression.

Support services

Support services should be tailored to the individual woman's needs and may include case management, child care, respite care, assistance with basic life needs (e.g., housing, food, and transportation), peer counseling, and legal and advocacy services. Ideally, this care should begin before pregnancy and should be continued throughout pregnancy and postpartum. Medical social workers play a very crucial role in this regard.

Right protocol for Post partum management of seropositive mother, contributions from NGOs and other support services will go a long way to achieve our goals of HIV free new generation of India.

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Infant Feeding Options

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Introduction

Breastfeeding is normally the best way to feed infants and children should not needlessly be deprived of it.¹ Even in rich countries, breastfed babies are less likely to become ill than those given replacement foods.³ In other parts of the world, where there is little access to clean water, sanitation and health services, not breastfeeding can greatly increase the risks of disease and death.^{4,5}

Unfortunately, breastfeeding can also transmit HIV virus. Breast-feeding accounts for up to 30% of HIV transmission from mothers to infants.⁶ In Africa, between one third and one half of infant HIV infections are due to breastfeeding.⁷ In resource-poor counties where safe alternatives to breast-feeding are not available, finding ways to avoid transmission through breast-feeding remains an issue of critical importance.

Risks of HIV transmission to infants from breast feeding - In HIV-infected mothers, both cell-free and cell-associated virus have been consistently identified in colostrum and mature milk and the transmission of HIV in breast milk, occurring at any point during lactation, has been well documented.⁸

Several factors are involved in or associated with HIV transmission via breast milk. High levels of maternal viraemia (high viral load) will increase the amount of HIV secreted in

breast milk and, consequently, increase the amount and duration of HIV exposure to the infant. Vitamin A deficiency in HIV-infected mothers is associated with cracked nipples (and increased vaginal shedding of HIV) which may be an additional source of viral exposure to the infant.⁹ Infant prematurity results in an immature neonatal immune system unable to mount an effective cell-mediated response to HIV and is associated with an increased risk of viral acquisition from breast feeding.^{9,10} The actual mechanism of HIV transmission by breast milk is not fully understood. However, neonatal mucus membranes cannot effectively prevent HIV infection and exposure to HIV in breast milk may result in viral infection directly through oral and gastric mucosa.⁸ Other conditions that may disrupt the integrity of neonatal oral mucosa, e.g., candidiasis, have been associated with an increased risk of HIV infection from breast milk.¹⁰ The amount of HIV secreted in breast milk is highest during the first few months following delivery and 70% of postnatal transmission takes places within the first four to six months of life.¹¹

Risks of not breast feeding - The risks associated with not breastfeeding vary with the environment, and with the individual circumstances of the mother and her family.

Meta-analysis has shown that lack of breastfeeding compared with any breastfeeding exposes children to increased risk of malnutrition, diarrhoea and pneumonia, especially in the first year of life. Even in developed countries an infant is at increased risk of diarrhoea.

Feeding options for HIV-positive mothers in developing countries

In countries with fewer resources, where replacement feeding can be much more hazardous, the recommendations for infant feeding usually depend on a mother's individual situation. Although there is some variation in national and local policies, most are influenced by the guidance published by the World Health Organization (WHO).

Recommendations on preventing transmission of HIV through breastfeeding depend on a woman being tested for HIV, requesting and being given the result, and accepting the implications of that result. Awaiting the

result of an HIV test should not be a reason to delay initiation of breastfeeding. Given the need to minimize the risk of HIV transmission to infants while at the same time not increasing their risk of other causes of morbidity and mortality, UN (WHO/UNICEF/UNAIDS) recommendations State that - "When replacement feeding is acceptable, feasible, affordable, sustainable and safe, avoidance of all breastfeeding by HIV infected mothers is recommended. Otherwise, exclusive breastfeeding is recommended during the first months of life" and should then be discontinued as soon as feasible.

1) The recommendations further state that "when HIV-infected mother choose not to breastfeed from birth or stop breastfeeding later, they should be provided with specific guidance and support for at least the first two years of the child's life to ensure adequate replacement feeding".

Antiretroviral drugs and breast Feeding: A preliminary report from the SIMBA study gave hope that ARVs could be used to reduce postnatal transmission through breastfeeding. One study in Zambia found that giving babies the antiretroviral drug nevirapine for the first fourteen weeks of life lowered the risk of transmission through breastfeeding by more than 60%.

Conclusion

With advancement of science now it is possible to prevent MTCT of HIV to infants. All pregnant women need access to HIV testing and counselling. Those who test positive face a very difficult decision about how to feed their babies. What they need is accurate information, clear guidance and ongoing support to succeed with their chosen strategies.

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Family planning in context to HIV +ve woman.

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More than 80% of all women living with HIV are in their reproductive years & they should be empowered to take informed choices relating to their reproductive lives. For a woman with HIV, dual protection means preventing unplanned pregnancy and disease transmission – both of HIV to an uninfected partner and of other sexually transmitted infections.

Preventing unintended pregnancies among women with HIV is one of the most important and cost-effective ways to reduce the number of infants born with HIV.

Methods Available

Method

Male and Female Condoms.



Consideration for Women with HIV.

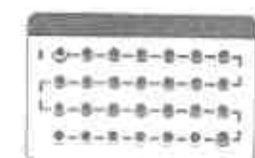
The only method that helps protect against both pregnancy and STI, including HIV.
Must be used correctly every time to be fully effective.
Maintaining consistent and correct use can be difficult.

Combined Oral Contraceptives (COCs)



Not known if certain ARVs decrease effectiveness of COCs. In case they do, condoms provide extra contraceptive protection.
Taking pills every day, without missing pills, is particularly important to compensate for any possible decrease in effectiveness when on ARVs.

Progestin-only pills (POPs)



Not known if certain ARVs decrease effectiveness of POPs. In case they do, condoms provide extra contraceptive protection.
Particularly appropriate for breastfeeding women who want pills. Exclusive breastfeeding, which is the safer breastfeeding option to reduce risk of HIV transmission to the infant, provides additional protection against pregnancy. For women who are not breastfeeding, taking pills every day, without missing a pill or pills, is particularly important in order to compensate for any possible decrease in effectiveness when on ARVs.

Progestin-only and combined contraceptives.

Not likely that ARVs reduce effectiveness of injectable. Still women using ARVs injectable contraceptives. should be especially careful to return on time for injections.



Implants.

Condoms could be used for additional protection from pregnancy, especially as the time of the next injection approaches or if a woman is late for next injection. It is not necessary to have the injection early or to shorten the injection interval.

Not known if certain ARVs decrease effectiveness of implants. In case they do, condoms provide extra contraceptive protection.

Emergency Contraceptive Pills (ECPs)



It is thought that ARVs do not reduce the effectiveness of ECPs. No evidence for increasing the ECP dosage for women on ARVs. Copper bearing intrauterine device (IUD) and levonorgestrel intrauterine device.

A woman who is at risk of HIV infection or who is infected with HIV can generally have an IUD inserted.

A woman who has AIDS, is taking ARVs, and is clinically well can generally have an IUD inserted.

A woman should usually not have an IUD inserted if she has AIDS and is not taking ARVs, or if she is taking ARVs, but is not clinically well.

If a woman develops HIV or AIDS while she has an IUD in place, it generally does not need to be removed.

A woman who has gonorrhea or chlamydia should not have an IUD inserted.

IUD users with AIDS should be monitored for pelvic inflammatory disease.

Female Sterilization and Vasectomy.

Delay sterilization and vasectomy if currently ill with AIDS-related illness.

Special arrangements are needed to perform female sterilization on a woman with AIDS and a vasectomy on a man with AIDS.

The procedure should be undertaken only in settings with experienced staff and sufficient equipment and support. Female sterilization and vasectomy do not prevent transmission of HIV.

Lactational amenorrhea method (LAM)

Women who are infected with HIV or who have AIDS and choose to breastfeed their infant can use LAM.

Exclusive breastfeeding for the first six months of a baby's life is the safer breastfeeding pattern. This pattern of breastfeeding is compatible with LAM.

If a woman's monthly bleeding return before six months, she will need another contraceptive method.

Women with HIV and their health care providers need to consider the infant feeding options available and to weigh their various risks and consequences.

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Fertility awareness methods

Calendar based fertility awareness methods rely on regular menstrual cycles. For women with advanced HIV (low CD4+ cell count), irregular cycles may be common and make these methods difficult to use.

Spermicides

For most people, fertility awareness methods are less effective than are other modern methods of contraception.
Woman at high risk of HIV infection and who have very frequent intercourse should not use spermicides.
Women with HIV infection, including AIDS, should not use spermicides.

Diaphragm

Diaphragms may help keep infectious organisms from reaching the cervix, however a recent study found that diaphragms do not protect against HIV infection (261)
Because diaphragms are used with spermicide, they are not generally recommended for women at high risk for HIV infection or women who are infected with HIV.

Sources :

Cates 2001 ; Guest 2004 ; Rabkin 2005 ; World Health Organisation 2005 ; World Health Organisation 2007.

Conclusion

Having HIV/AIDS, or using ARVs poses no limitations on use of hormonal methods such as oral contraceptive pills (OCs), injectable contraceptives, and implants. Condoms, of course, have a special role, helping to prevent both pregnancy and STIs when they are used consistently and correctly. By following the standard precautions, health care personnel can provide all methods that require procedures – injectables, implants, IUDs, vasectomy, and female sterilization – without fear that they will become infected with HIV.

Women with human immunodeficiency virus (HIV), including women with acquired immune deficiency syndrome (AIDS), in many cases can lead healthy sexual and reproductive lives. Like all other women, women with HIV have the right to make their own decisions about their reproductive and sexual health.



Adolescent Health Issues

●● **Dr Laxmi Shrikhande**
Chairperson-HIV / AIDS Committee, FOGSI

Introduction

AIDS is a foremost problem of the youth. With an estimated 11 million cases worldwide, adolescents are the fastest growing group of persons newly diagnosed with human immunodeficiency virus (HIV) and are at the center of the worldwide AIDS pandemic.

- 1) According to NACO the majority of the newly infected people with HIV/AIDS are young people below 25 years in age.
- 2) This is partly because a large part of the world population is young between 10 to 19 years of age.
- 3) Two-thirds of women ages 13 to 24 living with HIV/AIDS gets infected through sexual relationships with HIV-positive men. Delayed sexual activity, safer sex practices, and abstinence would dramatically decrease HIV incidence among girls and young women. But, as statistics demonstrate, the barriers to ensuring such practices are often insurmountable for a complex array of reasons. Limited economic opportunity, single-parent homes, and a lack of optimism about the future are each associated with early initiation of sexual activity and risky sexual behavior. Young women who have suffered sexual abuse or coercion are more likely to have early sexual experiences and multiple partners than are young women who have not experienced abuse.
- 4) Moreover, for most teens surveyed, "their sense of risk is further diminished because they do not personally know anyone their age who is HIV positive.
- 5) Even when they know how HIV is transmitted, some adolescent girls and young women are not able to take action to reduce their risk of infection. The study found that not using a condom with a steady partner was often considered a sign of intimacy—a view reinforced by the paucity of visual or musical representations of abstinence or safer sex in entertainment media that target youth.
- 6) HIV/AIDS stigma and fear of the life-threatening implications of an HIV diagnosis—as well as a lack of awareness of "teen-friendly" testing facilities—may deter youth from seeking counseling and testing and care.
- 7) More specifically, adolescent youth may fear that test results will be reported to their parents or do not want to be seen entering a health care site known to be associated with HIV/AIDS. Contaminated blood and unsafe medical injections are still important routes of HIV transmission in India apart from unsafe sex.
- 8) Early Marriage Risks

Programs addressing adolescent reproductive health and HIV prevention have focused primarily on unmarried youth. However, the majority of recent unprotected sexual activity among adolescent girls in most developing countries occurs within marriage.

Number of factors may increase HIV risk among girls married at a young age in areas with high HIV prevalence. At marriage these girls make a transition from virginity or infrequent sex to a very high frequency of sex. The most common HIV-prevention strategies—abstinence and condom use—are not options for married adolescents, who are under tremendous pressure from family and society to bear children. Girls married young tend to have husbands who are much older than they. This age gap may further intensify the power imbalance between husbands and wives, discouraging the open communication required to ensure voluntary counseling and testing for HIV, the sharing of test results, and planning for safe sexual relations throughout marriage.

. In Bangladesh, India, Mali, and Nepal, at least half of all women currently ages 20 to 24 were married by age



18, according to Demographic and Health Survey (DHS) data. In certain regions of Bangladesh, Ethiopia, India, and Nigeria, at least 40 percent of these women were married before age 15.

Policy and program managers are working in two primary ways to address the disadvantages faced by girls who marry early: to support later age of marriage and to respond to the needs of young married girls.

Risk reduction strategies

An essential step in controlling the pandemic of HIV is helping adolescents reduce or avoid sexual risk behavior. Providing adolescents with the information, motivation, and interpersonal skills needed to avoid sexual risk (eg, to abstain) and reduce risk (eg, use condoms) is an important aspect of reducing the spread of HIV.⁹

Sex Education

Adolescence is shrouded in myths and misconceptions about sexual health and sexuality, as in Indian culture, talking about sex is taboo. Young people learn more about sexual and reproductive health from uninformed sources, which results in the perpetuation of myths and misconceptions about sex & sexual health. Sexual activity in general is associated with a number of risks, including- Sexually Transmitted Diseases (including HIV / AIDS), chronic pelvic pain / cervical cancer, Emotional distress, and Pregnancy through failure or non-use of birth control. This is particularly true for adolescents as they are not emotionally mature or financially self sufficient.

For long policy makers believed that conservative social behaviour would protect India from the rapid spread of HIV. In India, 44% of reported AIDS cases occur among 15-29 year olds. This should serve as eye opener for policy makers. In India the debate on making sex education mandatory in schools continues. If nothing else, India's population and AIDS/HIV figures are reason enough to start talking about sex. Adolescents have easy access to –TV, Films, Books, Porno material & Internet. Information gathered from all these mediums might not be correct. Even a 5th std student knows where to get information if parents & teachers are not forth coming.

There is a huge misconception & misinterpretation in the public about sex education. It is not about teaching them how to do sex-they already know it. Sex education is about developing young people's skills in Decision making, Resisting peer pressure, To form attitudes, To be able to differentiate between what is right & what is wrong? Rechristen it as family life education or adolescent health education if we are not comfortable with the words sex education.

The unsuspecting parents would be shocked to learn that 50% of the youngsters including girls lose their virginity, even before they leave college. In India, one-half of all young women are thought to be sexually active by the time they are 18, and almost one in five are sexually active by the time they are 15. These findings raise several other important questions regarding HIV/AIDS & unwanted pregnancies, which may play havoc with young lives. It is high time parents accepted the reality. While moral values instilled in the child are important-in those moments of weakness, only pure passion rules. Sex education is the only answer to this dilemma.

There are many myths about sex education. It will make teenagers promiscuous. It will contaminate their mind. Does preaching help? Is abstinence feasible in today's world with late marriages? There are many advantages of sex education. Teenagers delay the age of 1st intercourse, it enhances the quality of relationships, Helps in developing healthy attitude towards opposite sex, It empowers them to protect themselves from Potential sexual abuse, HIV / AIDS & STI.

Adolescents comprise 33% of population. Let's empower our children. Their right & interests should be above all politics. Sex education should be given. However various issues to be addressed by policy makers are- Who should give? How it should be given? What information should be given? At what age it should be given?

Sex education is as necessary as immunization. It gives Protection against-Sexual abuse & exploitation, unintended pregnancy, sexually transmitted infections & HIV/AIDS.



Conclusion

The HIV/AIDS epidemic is not a health problem alone, but a problem of such magnitude that, every facet of human life is affected. This makes it necessary for every sector of the society, the governmental organizations, business, industry, leaders, policy makers etc to be involved in the programme. Reaching HIV-infected girls and young women; getting them into care; meeting their physical, emotional, and social needs; helping them adhere to their treatment regimen; and encouraging ongoing sexual risk reduction is a tall order. It is not, however, an impossible task.

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Post exposure prophylaxis (PEP) following Needle stick injury

•• Dr. Alok Vashishtha

Needle stick injury

The needle stick injury is defined as a penetrating injury wound from a needle (or other sharp objects like scalpel, broken glass vial etc) that may result in exposure to blood or other body fluids.

Exposure Reporting

First step in managing exposure is to ensure reporting. It should be accurate and prompt. Usually there is underreporting of exposure to blood by health care workers.

After reporting of exposure arrangement should be made for follow up care of exposed. Confidentiality of exposed worker must be protected. Proper pre test and post test counseling should be offered to HCW.

Management of exposure site

This should be treated as medical emergency and treatment should begin at the earliest possibly, preferably within 2 hrs. Exposure site should be decontaminated as soon as possible. Puncture and other cutaneous injuries should be washed with soap and water. Do not try to squeeze the blood out because it can push the blood and inoculum towards systemic circulation. Mucosal exposures involving mouth and nose should be flushed with water. Following an ocular exposure, eyes should be irrigated with clean water, saline or sterile irrigants designed for this purpose

Clinical Evaluation

Assessment of Exposure and Source Patient

Detailed assessment of exposure incident and thorough evaluation of source patient should be carried out. If source patient's status with respect to HIV is not known, the relevant test should be carried out with all protocols after pre test and post test counseling. Rapid testing should be confirmed by enzyme immunoassay as soon as possible. If results are not immediately available or results are awaited and exposure has occurred, the best strategy is to begin prophylaxis immediately and either discontinue or modify regimen when results of test are available. In case source patient is known to be HIV infected then all information about patient which include time since patient is infected, CD4+ counts, viral load assays and detailed history about past and current antiretroviral therapy should be obtained.

If source patient's serological status is unknown and can't be learned, detailed epidemiological assessment of exposure should be made and expert consultation should be taken.

Selecting a Chemoprophylaxis Regimen

A number of antiretroviral agents have been used for post exposure prophylaxis. CDC guidelines recommend a "basic" two drug regimes, the preferred regimen are as follows-

1. Zidovudine plus lamivudine
2. Tenofovir plus Lamivudine
3. Tenofovir and Emtricitabine

Other alternative "basic" two drug regimen recommend are

1. Stavudine plus lamivudine
2. Didanosine plus lamivudine

For exposure ascertained with an increased risk for exposure i.e. from large bore hollow needle exposure, deep puncture wounds, exposure to needle that had been in artery or vein and exposure to blood from source patients who have symptomatic HIV infection, AIDS, the primary HIV infection or known high viral loads CDC recommends a three drug "expanded" regimen.

The recommended three drug 'expanded' regimen consists of a two drug "basic" regimen plus one of the following agents

1. Lopinavir + Ritonavir (preferred)
2. Indinavir ± Ritonavir (avoid in late pregnancy)
3. Atazanavir ± Ritonavir (must be boosted, if tenofovir used in basic regimen)
4. Saquinavir + Ritonavir
5. Nelfinavir
6. Efavirenz (teratogenic; avoid in pregnancy)

A variety of other regimens have been used, particularly in settings in which the source patient for an exposure has extensive antiretroviral experience and in instances in which antiretroviral resistance is known or highly suspected. In those cases prophylaxis should be initiated under expert consultation.

There are certain drugs which are not generally recommended for PEP these are: Nevirapine, Abacavir, Delavirdine and Zalcitabine.

Adherence to Prophylaxis Regimen

All strategies should be undertaken to increase adherence and or to ensure complete adherence. This includes counseling of individual on seriousness of exposure, effectiveness of PEP regimen, need for 100% adherence and regular follow up for management of toxicities if encountered.

Duration of Post exposure prophylaxis regimen

The optimal course of treatment is 4 weeks.

Follow-up

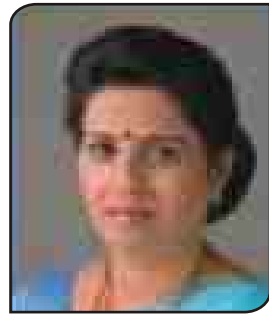
Serological tests for HIV for exposed person should be done at base line, 6 weeks, 3 months and 6 months with proper pre test and post test counseling. Person receiving prophylaxis should follow up with the clinician at least once in a week. He should be advised to refrain from donating blood, semen or organs/tissues and abstain from sexual intercourse. In case sexual intercourse is undertaken by exposed person a latex condom to be used consistently. In addition, women health care personnel should not breast-feed their infants during the follow up period.

Advisability of Expert Consultation

A properly trained experienced consultant is often best suited to probe whether an exposure had occurred or not, then to select number of agents to be administered, and to help tailor a regimen specifically for unique situation. There are some special cases which should be particularly managed by an expert only e.g. management of exposure if source patient has experience with antiretroviral agents; management of exposure if reporting was delayed; and management of exposure in a pregnancy.

FOGSI HIV PEP hotline number is 9997177999





Universal / Standard Precautions to Prevent Transmission of HIV

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- Dr Khyati A. Patel
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Introduction

Globally, as per reports on the global aids epidemic, UNAIDS, 2008, there are about 33 million people living with HIV and in India about 4.2 millions living with HIV1. HIV has been isolated from blood, semen, vaginal secretions, saliva, tears, breast milk, CSF, amniotic fluid and urine and is likely to be isolated from other body fluids and secretions and excretions. However, epidemiologic evidence has implicated only blood, semen, vaginal secretions and breast milk in transmission. The increasing prevalence of HIV has increased the risk of healthcare professionals of acquiring HIV from contamination of skin, mucous members and conjunctiva with blood. Obstetricians and midwives often face blood splashes, facial and body blood and amniotic fluid contaminations2. The Center of Disease Control Policy Statement (1987) advises "Universal Precautions" for preventing transmission of HIV3. It also emphasizes the need for healthcare professionals to consider ALL patients as potentially infected with HIV and to adhere judiciously to infection control precautions for minimizing the risk of exposure to blood and body fluids of all patients. Universal precautions are applied to blood, other body fluids containing blood, semen, vaginal secretions, tissues, amniotic fluid, CSF, synovial, pleural, peritoneal and pericardial fluids.

Universal Precautions

1. All health-care workers should routinely use appropriate barrier precautions to prevent skin and mucous-membrane exposure when contact with blood or other body fluids of any patient is anticipated. Gloves should be worn for touching blood and body fluids, mucous membranes, or non-intact skin of all patients, for handling items or surfaces soiled with blood or body fluids, and for performing venipuncture and other vascular access procedures. Gloves should be changed after contact with each patient. Masks and protective eyewear or face shields should be worn during procedures that are likely to generate droplets of blood or other body fluids to prevent exposure of mucous membranes of the mouth, nose, and eyes. Gowns or aprons should be worn during procedures that are likely to generate splashes of blood or other body fluids.
2. Hands and other skin surfaces should be washed immediately and thoroughly if contaminated with blood or other body fluids. Hands should be washed immediately after gloves are removed.
3. All health-care workers should take precautions to prevent injuries caused by needles, scalpels, and other sharp instruments or devices during procedures; when cleaning used instruments; during disposal of used needles; and when handling sharp instruments after procedures. To prevent needlestick injuries, needles should not be recapped, purposely bent or broken by hand, removed from disposable syringes, or otherwise manipulated by hand. After they are used, disposable syringes and needles, scalpel blades, and other sharp items should be placed in puncture-resistant containers for disposal; the puncture-resistant containers should be located as close as practical to the use area. Large-bore reusable needles should be placed in a puncture-resistant container for transport to the reprocessing area.
4. Although saliva has not been implicated in HIV transmission, to minimize the need for emergency mouth-to-mouth resuscitation, mouth- pieces, resuscitation bags, or other ventilation devices should be available for use in areas in which the need for resuscitation is predictable.



5. Health-care workers who have exudative lesions or weeping dermatitis should refrain from all direct patient care and from handling patient-care equipment until the condition resolves.

6. Pregnant health-care workers are not known to be at greater risk of contracting HIV infection than health-care workers who are not pregnant; however, if a health-care worker develops HIV infection during pregnancy, the infant is at risk of infection resulting from perinatal transmission. Because of this risk, pregnant health-care workers should be especially familiar with and strictly adhere to precautions to minimize the risk of HIV transmission. Implementation of universal blood and body-fluid precautions for ALL.

Precautions for Invasive Procedures

An invasive procedure is defined as surgical entry into tissues, cavities, or organs or repair of major traumatic injuries. The universal blood and body-fluid precautions listed above and combined with the precaution listed below should be the minimum precautions for ALL such invasive procedures.

1. All health-care workers who participate in invasive procedures must routinely use appropriate barrier precautions to prevent skin and mucous-membrane contact with blood and other body fluids of all patients. Gloves and surgical masks must be worn for all invasive procedures. Protective eyewear or face shields should be worn for procedures that commonly result in the generation of droplets, splashing of blood or other body fluids, or the generation of bone chips. Gowns or aprons and gumboots made of materials that provide an effective barrier should be worn during invasive procedures that are likely to result in the splashing of blood or other body fluids. All healthcare professionals who perform or assist in vaginal or cesarean deliveries should wear gloves and gowns when handling the placenta or the infant until blood and amniotic fluid have been removed from the infant's skin and should wear gloves during post-delivery care of the umbilical cord.

2. If a glove is torn or a needlestick or other injury occurs, the glove should be removed and a new glove used as promptly as patient safety permits; the needle or instrument involved in the incident should also be removed from the sterile field.

Human breast milk has been implicated in perinatal transmission of HIV. However, occupational exposure to human breast milk has not been implicated in the transmission of HIV infection in healthcare professionals4. Hence, universal precautions do not apply to human breast milk, however gloves can be worn by the healthcare professionals in situations where the exposure of breast milk might be frequent e.g. in breast milk banking.

Conclusion : Healthcare professionals are at risk for HIV transmission. They should consider ALL patients as potentially infected with HIV and adhere judiciously to universal precautions for minimizing the risk of exposure to blood and body fluids of patients. Universal precautions if practiced properly, the risk of transmission of HIV among health professionals could be negligible.

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Infertility In Serodiscordant Couples

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Introduction

Life expectancy among patients with HIV has increased upto 30 years since combination anti HIV therapies were introduced. In the pre HAART era, women with HIV were often discouraged from having children because of the high vertical transmission rates and the potential for uninfected children to be left orphaned once their infected parents developed AIDs and died. But now significant number of people with HIV intends to have children". Fertility Desires and Intention of HIV positive men and women", a study published in 2001 in family planning perspective, concluded that 29% of HIV positive women and 28% of HIV positive hetero sexual or bisexual men who received medical care in the US desired children in future.

HIV infected individuals need adequate preconception care and fertility assessment for both partners Assisted reproduction techniques whether for a problem of sterility or to minimize the risk of virus transmission, allow couples serodiscordant for HIV to consider pregnancy by nearly eliminating the risk of infection to partner and child. In India alone 56,700 children are becoming infected with HIV each year from parent to child transmission which can be prevented totally by the use of assisted reproductive techniques and HAART.

Groups of patients infected with HIV requiring infertility treatment

1. Serodiscordant couples

- HIV positive male + HIV negative female
- HIV negative male + HIV positive female

The serodiscordant couples may not be infertile but may be offered sophisticated assisted reproductive techniques to prevent HIV seroconversion in the negative partners.

Assisted reproductive technique for HIV discordant couples

For discordant couples in which the male partner is infected the options for assisted conception risk reduction include

- Sperm washing
- Donor insemination
- Timed unprotected intercourse

Sperm washing is the most effective risk reduction technique if genetic parents hood is desired by the infected male. It is a procedure in which spermatozoa which do not carry HIV, are separated from HIV contaminated seminal plasma and non germinal cells using a density gradient and swim up technique. The resulting sperm sample is then tested for HIV by PCR assays before being used for insemination or IVF.

Discordant couples in which the female partner is HIV positive have the following options for assisted conception/ risk reduction

- Self insemination of partner semen
- Timed unprotected intercourse.

Timed unprotected intercourse should be avoided and quills, syringes, sterile containers or spermicide free condoms should be provided for self insemination during the fertile time of the cycle.

Regarding surrogacy little information is available specific to HIV positive couples. However, it is likely that similar rules would apply regarding implantation of potentially infected tissue into an HIV negative women.

Proposed protocol to evaluate HIV sero discordant couples wanting to be parents

1. Counselling with the couple

- Risk of HIV transmission, and other infections (hepatitis B or C) to seronegative partner and/or newborn
- Factors affecting transmission.-HIV – RNA and CD4 cells count, Genital tract infections, Tobacco, alcohol and illicit drugs, Stability and duration of couple relationship
- Life expectancy of HIV positive partner
- Age of mother risk for birth defects and reduced fertility
- Fertility impairment due to HIV infections and or antiretrovirals
- Adverse outcome of pregnancy or teratogenicity due to antiretrovirals
- Reproductive options- ,Natural conception, Self – insemination, Assisted reproduction, Other options, Adoption, Accepting no child

2. Clinical evaluation of each partners

- History special attention to HIV status, opportunistic infections, CD4 count, viral load
- Antiretrovirals adherence, tolerance, experienced in pregnancy, teratogenicity
- Fertility menstrual cycle, infertility factors
- General examination
- Pelvic examination
- Investigations
 - Screening for HIV, hepatitis A, B and C cytomegalovirus, herpes simplex, rubella, Toxoplasma and syphilis
 - Vaccination status: consider rubella, varicella, hepatitis A/B
 - Evaluation of fertile potential

- Male partner: semen analysis
- Female partner: thyroid hormones, LH, FSH , estradiol, progesterone and prolactin
- Pelvic ultrasound
- Hysterosalpingogram (if recommended according to past history)



ART are often expensive, time consuming and are therefore not always accepted by the patients. In such cases HAART has proved highly effective not only in preventing disease progression in the infected individual but also preventing seroconversion of the partner and the newborn.

Barriro et al studied HIV serodiscordant couples on HAART and found no seroconversion in uninfected partners. They concluded that serodiscordant couples are exposed to negligible risk of sexual transmission of HIV when the infected partner presents with complete suppression of plasma viremia while receiving HAART.

Conclusion

HIV discordant couples seeking pregnancy should receive specialized medical counseling and evaluation. They should be informed of the risk of vertical transmission through assisted or natural reproductive attempts. If the couples have opted for natural pregnancy, undetectable viraemia under HAART is mandatory and pregnancy discouraged in patients with any level of HIV infections. A better understanding of the fertility related intentions and desire of HIV positive individuals, as well as advancing knowledge regarding reproductive technologies, now the hope of parenthood to HIV serodiscordant childless couples.

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Sexually Transmitted Infection In The Era Of Hiv And Aids

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Introduction

A sexually transmitted disease (STD) or venereal disease (VD), is an illness that has a significant probability of transmission with an infected partner and include Human Papilloma Virus, chlamydia, gonorrhea, genital herpes, genital warts, and syphilis by means of vaginal intercourse, oral sex and anal sex. Increasingly, the term sexually transmitted infection (STI) is used, as it has a broader range of meaning; a person may be infected, and may potentially infect others, without showing signs of disease.

STDs are becoming rampant all over, more so in developing countries. More than 15 million new cases of STD are diagnosed every year and approximately 65% of these cases are diagnosed in people under the age of 24 years. World wide incidence of STDs continues to increase specially among adolescents and represents a major public health problem. Millions of young people become infected with STDs each year. Women are not only more prone to STDs but could have dangerous social and health sequels. The STDs clinic constitutes a pool of available clients that can be assessed for the risk factors contributing for the infection.

Prevalence

According to National AIDS Control Organization (NACO) the annual incidence of STDs in India is above 5% in adult population, NACO 2003. The WHO estimates that India might have more HIV infected individuals than any other country in the world.

The World Bank has reported that, STDs excluding HIV are the second cause of healthy life lost in women, after maternal morbidity and mortality between ages 15 to 45 in the developing world. Under 20 are more vulnerable than older because of their relatively immature genital tract with fewer layers of mucous membrane.

Rates remain high in most of the world, despite diagnostic and therapeutic advances that can rapidly render patients with many STDs noninfectious and cure most. In many cultures, changing sexual morals and oral contraceptives use have eliminated traditional sexual restraints, especially for women, and both physicians and patients have difficulty dealing openly and candidly with sexual issues. Additionally, worldwide dissemination of drug-resistant bacteria (eg, penicillin-resistant gonococci) reflects misuse of antibiotics and spread of resistant clones by mobile populations.

Commonly reported prevalence of STIs among sexually active adolescent girls both with and without lower genital tract symptoms include chlamydia trachomatis (10 to 25%), Neisseria gonorrhoeae (3 to 18%), Syphilis (0 to 3%), Trichomonas vaginalis (8 to 16%), and Herpes simplex virus (2 to 12%). Among adolescent boys with no symptoms of urethritis, isolation rates include C. trachomatis (9 to 11%) and N. gonorrhoeae (2 to 3%).

In 1996, WHO had estimated that more than 1 million people were being infected daily, about 60% amongst young (25 years of age) and of these 30% are <20 years. Between the ages of 14 to 19, STDs occur more frequently in girls than boys by a ratio of nearly 2:1, this equalizes by age 20. There may be gender difference in the time of initiation of sexual intercourse before age of 18 years. Girls are more likely to be exposed to



older male counterparts and cross generation sex. An estimated 340 million new cases of syphilis, gonorrhea, and chlamydia antrichomoniasis occurred throughout the world in 1999.

Whys And Hows

STDs are transmitted from one person to another by certain sexual activities. It is not possible to catch any STD from sexual activity with a person who is not carrying a disease; conversely, a person who has an STD must have got it from contact (sexual or otherwise) with someone who had it, or his/her bodily fluid. One cannot get an STD from everyday, nonsexual activities, such as: giving blood, sitting next to an infected person, sitting on toilet seats, sharing eating utensils, touching doorknobs, using swimming pools.

Transmission of STDs / AIDS among women has special significance because of biological, socio-cultural factors, and so on. In women, STDs may have dangerous sequelae; interventions need to be specially directed keeping this in mind. They frequently have a poor prognosis once infected and die sooner than men. Major effects include decline in fertility and that the related morbidity/mortality continues to rise. This may be related to the fact that the progression of STDs is associated with basic health and immune state of the individual prior to infection and women tend to have poor general health and nutrition.

While data are lacking, married women have little ability to discuss or negotiate reduction in sexual partners or use of condoms, so they become naturally prone. This vulnerability to STD is because of biological and behavioral factors. The biological factors among young women have more to do with their sexual anatomy being more susceptible to abrasions that can allow organisms to enter the body. The immature reproductive and immune system make adolescents more vulnerable to infection by STD agents.

The reproductive health needs of young age groups are poorly understood and yet have far-reaching implications on the future of any country and the world at large. Sexual content is regularly marketed to these people and this affects their sexual activity and belief about sex. TV, movie, music and internet provide teens with seemingly unlimited access to information on sex as well as the steady supply of people willing to talk with them. These consequences of these exposures is increased stimulation to sexual activity with resultant consequences including STDs.

Scenario is changing very rapidly with active management of bacterial STD. Epidemiological factors influencing STDs-like social, cultural and environmental factors; sexual practices; moral outlook; sex education. The available data in India is limited due to lack of compulsory "reporting system and registry" and presence of asymptomatic persons with STDs in society.

Types And Pathogenic Causes

- 1) Bacterial, Fungal, Viral, Parasite, Protozoal
- 2) Sexually transmitted enteric infections

STDs are spread through contact with: infected body fluids, such as blood, vaginal secretions, or semen; infected skin or mucous membranes, sores in the mouth. The symptoms of STDs may include: sores or blisters on or around the sex organs or mouth; pain or burning during urination; discharge from the penis or vagina that smells or looks unusual; itching, swelling, or pain in or around the sex organs.

Prevention

There are evidences in developed and developing countries that acknowledging the sexual activity of young people and meeting their sexual health needs with targeted education and preventive care services can help to reduce risky sexual behavior and its consequences. Young people who begin sexual activity early appear more likely to have sex with high risk partners or multiple partners and are less likely to use condoms. Managing STDs and altering the behavior that leads to it are the essential elements of any STDs prevention and control programme.

Healthcare professionals suggest safer sex, such as the use of condoms, as the most reliable way of decreasing the risk of contracting STD during sexual activity, but safer sex should by no means be considered



an absolute safeguard. The transfer of and exposure to bodily fluids, such as blood transfusions and other blood products, sharing injection needles, needle-stick injuries (when medical staff are inadvertently jabbed or pricked with needles during medical procedures), sharing tattoo needles, and childbirth are other avenues of transmission. These different means put certain groups, such as doctors, haemophiliacs and drug users, particularly at risk.

Condoms only provide protection when used properly as a barrier. Only latex condoms are considered effective protection against STDs. Birth control pills, diaphragms, sponges, and other contraceptives do not prevent STDs.

The most effective way to prevent sexual transmission of STIs is to avoid contact of body parts or fluids which can lead to transfer, not necessarily any sexual activity with an infected partner. Vaccines are available that protect against some viral STIs, such as Hepatitis B and some types of HPV. Vaccination before initiation of sex is safe.

There are safe alternatives to vaginal, anal, or oral sex: abstinence, masturbation, kissing, and fantasy. Monogamy, sex education and contraceptive information should be primary things in prevention of unintended teenage pregnancy and STD including HIV. Prevention by education for protection is the key.



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T.B. as co-infection with HIV during pregnancy

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HIV infection has been known to human since last 28 years, but is the most widely discussed disease. It is said to be silent infection which can be diagnosed only after suspicion and necessary blood tests are done. It is said to have infected more than 55 million people till now, half of them are already dead. This speaks about the disease burden.

HIV and TB are a lethal combination, each speeding the other's progress. It was observed that lifetime risk of developing TB in HIV infected individual is 60%. 1 Person with HIV and TB are 30 to 50 times more likely to become sick than HIV-negative person infected with TB. TB is a more difficult to diagnose, and is a leading cause of death among people who are HIV-positive, accounting for about 15% of AIDS deaths worldwide.

Pregnancy itself is a state of immuno-compromise. TB in pregnant women has been a topic of concern since days of Hippocrates.² TB is not so prevalent in HIV negative pregnant women. But if it occurs, active TB is more dangerous than past cured / quiescent infection. Until 1950's many experts had recommended abortion for women with TB.³ Hedvall found equal chances of benefit from drug therapy and risk of TB during pregnancy.⁴ Untreated TB carries risk for both mother and child. Diagnosis of tuberculosis is difficult during pregnancy and treatment too is difficult due to drug interaction and possibility of teratogenic effects.

TB & HIV infection during pregnancy further worsens the situation. Among HIV infected women, reactivation of old (or recently treated) TB during pregnancy endangers mother's life, thereby increasing chances of unfavourable pregnancy outcome with risk of increased maternal as well as perinatal mortality. Congenital (in utero or transplacental) TB is rare and is mostly acquired in infantile age while breastfeeding.

A prospective study of 577 pregnant women done by Espinal M, Reingold AL in Santo Domingo, the Dominican Republic (African Country) in 1991-92, showed that prevalence of HIV among TB infected pregnant women was 5.9%. TB within 6 months of childbirth, among HIV infected mothers was 0.63 %. ⁵

In July 2008, Daniel G Datiko et al reported from the study done in Southern Ethiopia on 1308 pregnant women infected with TB, 226 (18%) were HIV positive. The rate of HIV infection was higher in TB patients from urban (25%) than rural areas (16%).⁶

Our hospital data (unpublished yet) with 370 HIV infected women (excluding cases of still birth, MTP and abortion) over past decade showed that 217 women had complete record of their illness. 51/217 (23.5%) couples (either partner) had TB during wife's pregnancy. Prevalence of TB among HIV positive pregnant women was found to be 39.2% and 62.7% in husbands of HIV infected women. 85% women were young, below 25 years. 33% of husbands were dead before or soon after the birth of the indexed child. We lost two mothers too due to TB and HIV (one within 5 days and other in 4 months after delivery).

Table 1- year wise distribution of TB and HIV infected couple during pregnancy

year	MB pair data	TB couple	Wife + TB	Husband + TB
2000	07	04	0	4 (3 dead)
2001	17	04	1	3 (2 dead, 1 sick)
2002	16	05	5	0 (all sick)
2003	28	11	4	7 (2 dead)
2004	28	03	0	3 (2 dead)
2005	44	09	3	6 (5 dead)
2006	32	05	3	2 (all alive)
2007	45	10	4	7 (3 dead)
Total	217	51 23.5%	20 (39.2%)	32 - 62.7%, (17 dead -53.1%)

17/51 (33.3%) were widowed and remarried (Cama & Albless Hospital, Mumbai)

Several studies have indicated that as a result of a combination of various cultural, social and economic factors, especially in low-income countries, women often have difficulties in accessing health care. Therefore by the time they attend clinics, their disease is already at a very advanced stage.⁷ The falling standard of health services in diagnosis and variable drug protocol along with poor adherence to the therapy of HIV as well as in TB give birth to multidrug-resistant HIV and TB. HIV and AIDS infection has contributed to the worsening impact of TB disease. Patient's immunity is a key factor in the fight against TB. Only by suspicion, early diagnosis and effective anti TB treatment as targeted intervention can reduce mortality associated with HIV

The prevalence of TB during pregnancy increases with higher prevalence of HIV in the community. Therefore, on a global level, Tuberculosis Control Programmes must understand and respond especially to the needs of women - in order to promote health and to reduce possible unequal access to health care.

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