SPECIFIC AIDS RELATED PROBLEM IN WOMEN SUFFERING HIV/AIDS

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Abstract

The impact of HIV on women is particularly acute. In many developing countries, women are often economically, culturally and socially disadvantaged and lack equal access to treatment, financial support, and education. In a number of societies, women are mistakenly perceived as the main transmitters of sexually transmitted diseases (STDs). Together with traditional beliefs about sex, blood and the transmission of other diseases, these beliefs provide a basis for the further stigma of women within the context of HIV.

In this topic, I have discussed that how HIV positive women are treated differently from men in many developing countries. Men are likely to be 'excused' for their behavior that resulted in their infection, whereas women are not.

Keywords:
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Women
Men

Nearly all cases of HIV infections in women in the developing world have been acquired heterosexually (i.e. from men to women) this is due to following facts:

- When women are first diagnosed, they tend to have lower viral loads (amount of HIV in the blood) compared to men who are newly diagnosed.
- Women generally have a faster disease progression, and lowerCD4 cell counts than men with similar viral loads.
- Women are more likely than men to develop bacterial pneumonia.
- Women have higher rates of herpes infections than men.
- Women get thrush (a yeast infection) in their throats more often than men.
- Men are eight times more likely than women to develop Kaposi's sarcoma or KS (a cancer-like disease caused by a herpes virus).

Women tend to be diagnosed with HIV later in their disease than men and fewer women are getting HIV treatment. This can have a negative impact on women's health. Women may postpone medical care and treatment due to a number of barriers including:

- Limited access to health care due to lack of insurance and/or

transportation.

- Unstable housing.
- Fear of violence in the home (domestic violence).
- Other responsibilities such as child care or caring for a sick partner.
- The stigma associated with HIV.
- Active substance abuse.
- Depression.
- Lack of financial resources and/or social supports.
- Mistrust of health care providers and/or the medical system.

All the above factors influence the relative vulnerability of women and disease and their access to mean of prevention and support in the face of AIDS.[1] Women who are infected with HIV infection can also transmit the HIV infection to others.

AIDS have become a significant cause of death among women between 20 and 40 years of age who live in large cities of America, sub-Saharan Africa and Western Europe.[2] In fact, AIDS in women usually shows up during the childbearing years, with most cases documented in women between 20 and 34 years old. Even though promiscuous sexual behavior and other high-risk activities increase the potential of acquiring HIV, most women become infected through sexual relation with a long-term , infected partner, through blood transfusion, or through sharing needles with infected drug addicts. Several factors including Biological, psychological, cultural well as lack of financial crises are specific AIDS-related problem which affects women. Furthermore, it should be kept in mind that HIV not only affects women as individuals but also a mother, wives, educators, and guardians of the family‘s cohesion. If women are protected then they can also protect their families and society at large.

2.1 Symptoms of HIV/AIDS in women - In many women, we have not seen any symptoms when they first become infected with HIV. But some women may have a flu-like illness (including fever, headache, tiredness, and enlarged lymph nodes) within a month or two after exposure to the virus. These symptoms usually disappear within a week to a month and are often mistaken for those of another viral infection.

More severe symptoms may not appear for 10 years or more. Even during the asymptomatic period, the virus is active inside a person’s body and can be passed to another person.[3] “*The HIV infected person may not have any more signs and symptoms. She may continue to do her routine work of cooking and care for children and submit to her husband needs. Her blood test may be done only when her husband or her child, has become sick. Later on, as her CD4 count begins to fall, she becomes prone to other, superadded infections called opportunistic infection*”. As the immune system worsens, a variety of complications starts to occur.

For many people, the first signs of infection are large lymph nodes or "swollen glands" that may be enlarged for more than three months. Other symptoms often experienced months to years before the onset of AIDS includes:

- lack of energy or fatigue
- weight loss
- frequent low-grade fevers and night sweats
- frequent yeast infections (in the mouth)
- skin rashes or flaky skin that is hard to heal
- short-term memory loss

Most symptoms of HIV disease are similar in men and women. Women who have HIV can have additional symptoms that happen more often.

These include:

- vaginal yeast infections
- other vaginal infections such as bacterial vaginosis; common sexually transmitted diseases (STDs) like gonorrhea, Chlamydia, and trichomoniasis; human papillomavirus (HPV) infections that cause genital warts and can lead to cervical cancer; pelvic inflammatory disease (PID)
- infection of a women's reproductive organs and menstrual cycle changes, such
- as not having periods

According to the Centers For Disease Control and Prevention (CDC), using a male or female condom every time you have vaginal or anal sex can greatly lower your risk of HIV infection[4]. Using condoms for oral sex will reduce your risk for other STDs as well. It also is important not to douche, since douching removes some of the normal vaginal bacteria that can protect you from infection.

2.2 OPPORTUNISTIC INFECTION - When the immune system loses too many CD4 cells, a person cannot fight off infection and as a result, a serious illness like cancer and a neurological problem develops. These infections are called Opportunistic Infections.(OIs) because they take advantage of the bodies weakened defenses. Opportunistic Infections can lead to hospitalization and disability and are responsible for most of the death in people with HIV.[5] While many Opportunistic infections can be controlled by the immune system, HIV targets and infects the same immune system, cell that is supposed to protect us from illness there are a type of white cell called CD4 cells.HIV takes over CD4 cells and turns them into virus factories that produce thousands of viral copies. As the viruses grow, it damages or kills CD4 cells weakening the immune system.

The Center for Disease Control and Prevention (CDC) defines an HIV+ person with a CD4 cell count of 200 or less as having AIDS. The CDC has also developed a list of more than

20 opportunistic Infections that are considered AIDS-defining conditions. If anyone is having one or more of this symptom of Opportunistic Infections, It means he is having AIDS.

Common Opportunistic Infections (OIs) associated with the reported cases of AIDS in India have been tuberculosis, a fungal infection of the mouth (oral candidiasis), *Cryptosporidia* (causing diarrhea), *Pneumocystis carnie* (causing pneumonia) and Herpes Zoster (causing shingles).While a detailed account of the economic burden of treating different episodes of these OIs at the family level and in hospital settings are yet to be worked out, it has been documented that satellite epidemics[6] of OIs are happening in different parts of the country.

2.3 CANCER with HIV/AIDS -

Cancer refers to the abnormal and uncontrolled growth of certain cells that are interfering with normal body functions. Cancer can spread (metastasize) from where it originates to other organs and parts of the body. It can destroy healthy cells and cause illness and death.

People who are infected with HIV have a substantially higher risk of some types of cancer compared with uninfected people of the same age. Three of these cancers are known as "acquired immunodeficiency syndrome (AIDS)-defining cancers" or "AIDS-defining malignancies": Kaposi sarcoma, non-Hodgkin lymphoma, and cervical cancer. A diagnosis of any one of these cancers marks the point at which HIV infection has progressed to AIDS. People infected with HIV are several thousand times more likely than uninfected people to be diagnosed with Kaposi sarcoma, at least 70 times more likely to be diagnosed with non-Hodgkin lymphoma, and, among women, at least 5 times more likely to be diagnosed with cervical cancer.[7]

Kaposi's Sarcoma (KS)[8] was one of the most common opportunistic infections in the early days of the AIDS epidemic. KS is actually caused by a virus called Kaposi's sarcoma herpesvirus (KSHV) or HHV-8. But KS behaves and it treats like a cancerous tumor. HHV-8 is transmitted through sexual contact or blood products and less common in women. As Kaposi's sarcoma on the skin is not life-threatening. However, if KS spreads to other parts of the body especially the lungs, it can cause serious problems. Its treatment decisions are usually made by an oncologist (cancer specialist) based on severity or stage of the condition.

Lymphoma is a specific type of cancer that involves the *lymph nodes* and the lymph system. If you have HIV and a low CD4 count, you are at risk for several types of lymphoma. The most common HIV-related lymphoma is called *Non-Hodgkin's* ***Lymphoma*** **(NHL)**. This type of cancer occurs most often in patients with an average CD4 count of **100cells/mm**[9] or less. Patients with NHL can have a range of symptoms including Painless, swollen lymph nodes in the neck, chest, underarm, or groin, Night sweats, Weight loss, Fever

Primary CNS lymphoma is a type of cancer that typically occurs in people with CD4 counts less

than **50 cells/mm**.[10] This type of cancer affects the lymph system in our brain and spinal cord. Symptoms of this type of cancer can include: a Headache, Memory loss, Confusion, Other neurological changes Diagnosis include many of the same types of tests as those for Non-Hodgkin's lymphoma—but because CNS lymphoma affects the brain directly.

Cervical Cancer is strongly linked to Human Papillomavirus (HPV) which is most common sexually transmitted infection in the world. Different strains of HPV warts or abnormal cell growth (dysplasia) near the anus or cervix. Dysplasia is another more common advanced HIV disease and CD4 cell counts in women. It is often more severe and difficult to treat than in HIV negative women.

In addition, People infected with HIV are at least 25 times more likely to be diagnosed with anal cancer than uninfected people, 5 times as likely to be diagnosed with liver cancer, 3 times as likely to be diagnosed with lung cancer, and at least 10 times more likely to be diagnosed with Hodgkin lymphoma. Moreover, HIV people do not have increased risks of breast, colorectal, prostate, or many other common types of cancer. Many people infected with HIV are also infected with other viruses that cause certain cancers.[11,12] The following is the most important of these cancer-related viruses:

- Human herpesvirus 8 (HHV-8), also known as Kaposi sarcoma-associated herpesvirus (KSHV), is the cause of Kaposi sarcoma.
- Epstein Barr virus (EBV) causes some subtypes of non-Hodgkin and Hodgkin lymphoma.
- Human papillomavirus (HPV) causes cervical cancer and some types of anal, penile, vaginal, vulvar, and head and neck cancer.
- Hepatitis B virus (HBV) and hepatitis C virus (HCV) both can cause liver cancer.

In addition, the prevalence of some traditional risk factors for cancer, especially smoking (a known cause of lung cancer) and heavy alcohol use (which can increase the risk of liver cancer), is higher among people infected with HIV.[13] The introduction of highly active antiretroviral therapy (HAART) in the mid-1990s greatly reduced the incidence of Kaposi sarcoma and non-Hodgkin lymphoma among people infected with HIV. HAART lowers the amount of HIV circulating in the blood, thereby allowing partial restoration of immune system function.

Although HAART has led to reductions in the incidence of Kaposi sarcoma and non-Hodgkin lymphoma among HIV-infected individuals, it has not reduced the incidence of cervical cancer, which has essentially remained unchanged.[14] Moreover, the incidence of several other cancers, particularly Hodgkin lymphoma and anal cancer, has been increasing among HIV-infected individuals since the introduction of HAART.[15]

As HAART has reduced the number of deaths from AIDS, the HIV-infected population has grown in size and become older. In 2003, the proportion of these other cancers exceeded the number of AIDS-defining malignancies. However, HIV-infected people do not develop most

cancers at a younger age than is typically seen in the general population.[16] The higher incidence of liver cancer among HIV-infected people appears to be related to more frequent infection with hepatitis virus (particularly HCV) and alcohol abuse or dependence than among uninfected people.

Because HIV-infected women have a higher risk of cervical cancer, it is important that they are screened regularly for this disease. Pap test abnormalities are more common among HIV-infected women and that HPV DNA tests may not be as effective as Pap tests in screening these women for cervical cancer.

2.4 TUBERCULOSIS with HIV/AIDS

Tuberculosis and HIV have been closely linked since the emergence of AIDS. HIV infection has contributed to a significant increase in the worldwide incidence of tuberculosis.[17] by producing a progressive decline in cell-mediated immunity, HIV alters the pathogenesis of tuberculosis, greatly increasing the risk of developing the disease in co-infected individuals and leading to more frequent extrapulmonary involvement and atypical radiographic manifestation. Although HIV-related tuberculosis is both treatable and preventable, incidence rates continue to climb in developing nations where HIV infection and tuberculosis are endemic and resources are limited. Worldwide, tuberculosis is the most common opportunistic infection affecting HIV-seropositive individuals, and it is the most common cause of death in patients with AIDS.[18]

In India, tuberculosis care and HIV care are increasingly being coordinated, but the full benefits have yet to be realized. An example of successful coordination is the referral of people with suspected tuberculosis from a voluntary counseling and testing centers for HIV to tuberculosis-control facilities. Between January and September 2006, a total of 15,000 people with suspected tuberculosis that were HIV-positive and 16,420 who were HIV-negative were referred to such facilities by centers in the six Indian states with the highest HIV prevalence (***Andhra Pradesh, Karnataka, Maharashtra, Manipur, Nagaland, and Tamil Nadu***); tuberculosis was diagnosed in 22.3% and 23.9% of patients in these groups, respectively. DOTS were begun in many of these patients. The control of both tuberculosis and HIV is likely to be most successful if programs collaborate whenever possible and are closely integrated with the rest of medical care.[19]

2.5 Gynecological Problems -

HIV women also suffer gynecological problems which cannot be avoided. This may be including vaginal problems and even sexual dysfunction brought about by pain and swelling of some reproductive parts. It is just normal that when this happens and the case is not yet known to the husband, he might feel different about his wife, for this proper information is needed in order to respond accurately to the symptoms and effect of HIV to women. Certain gynecological conditions are more common, more serious and/or more difficult to treat in HIV+ women than HIV- women. If left untreated, some GYN infections can develop into more serious conditions such as Pelvic Inflammatory Disease or cervical cancer**.**

Herpes Simplex Virus (HSV, genital herpes)There are many forms of herpes. The most common forms of herpes are **herpes simplex virus-1** and **herpes simplex virus-2.** Although herpes-1 is most often associated with cold sores, both forms may be sexually transmitted and can cause genital herpes. Genital herpes is a sexually transmitted infection, most commonly caused by herpes simplex virus 2 (HSV-2). Its close relative, HSV-1, causes herpes of the mouth, lips, and skin, like cold sores.

Genital herpes recurs and there is no cure. Symptoms include single or multiple small blisters that open and become sores after a few days. Other symptoms include swelling of the vulva, fever and enlarged and tender lymph nodes in the stomach and groin area (abdomen).

The most common sites for herpes in women are the labia majora (the vagina's "outer lips"), labia minora (the "inner lips") and butt. Though herpes may lay dormant for long periods, it can appear again at any time, especially for those with a weak immune system.

Oral acyclovir (Zovirax) and famciclovir (Famvir) are used to treat herpes. Valacyclovir (Valtrex) requires fewer pills and thus is easier to incorporate into treatment regimens where many other pills are being used. However, it is not recommended for use in people with immune suppression. Some people still use valacyclovir and monitor carefully for side effects. For women with frequent outbreaks, daily acyclovir therapy may help prevent them.

Human Papillomavirus (HPV, warts) is a sexually transmitted infection that causes abnormal growth of tissue on the feet, hands, vocal chords, mouth, anus or genitals. Two kinds of abnormal growth can occur genital warts or dysplasia.

Genital warts are soft, moist, red or pink swellings on the vulva, in or around the vagina or anus, on the cervix or thigh. Dysplasia refers to abnormal changes in the size, shape or appearance of the cells that line the cervix. Although dysplasia is not cancer, if left untreated it can turn into cancer. There are many ways to treat HPV, including surgery, electric current (electrocautery), chemicals, lasers and the topical cream imiquimod (Aldara). Treatment can be painful and may need to be repeated.

In June 2006, the Food and Drug Association (FDA) approved a vaccine called Gardasil™ for prevention of cervical cancer. The vaccine is approved for girls and women who are 9 - 26 years of age. Gardasil™ is effective in preventing cervical cancer caused by HPV types 16 and 18, which cause approximately 70% of all cervical cancers and in preventing infection with HPV types 6 and 11, which cause approximately 90% of all genital warts. Gardasil™ is a recombinant vaccine (contains no live virus) that is given as 3 injections over a 6-month period.For women living with HIV, there are additional challenges to consider when diagnosed with HPV. Many women may respond poorly to standard therapies, especially those who have low CD4+ cell counts or HGSIL. Multiple treatments using different methods may be needed. Now a day several treatments are available for HPV,

but they generally do not cure the disease, and some have significant side effects. These treatments also tend to be expensive.

Fungal Infections (yeast infections, vaginal candidiasis, vaginitis) is a very common vaginal infection caused by yeast (fungus). Symptoms are itching, burning, and pain around your vagina, labia, or anal area. A person may also have a thick, cottage cheese-like vaginal discharge. HIV+ women often have recurring yeast infections that are difficult to treat. Treatments include Over-the-counter creams like Monistat or Gyne-Lotrimin or prescription anti-fungal creams (HIV+ women often need longer courses of treatment) and Prescription oral antifungal drugs such as Nizoral (ketoconazole), Diflucan (fluconazole), or Sporanox (itraconazole) for difficult-to-treat infections. Many antifungal drugs interact with HIV drugs.

Syphilis is a sexually transmitted infection caused by the bacteria, *Treponema pallidum*. It enters the body through tiny scratches in the skin, where it multiplies and then spreads. An increased risk for HIV infection is associated particularly with syphilis even after controlling for other sexual risk behaviors suggesting that syphilis is independently associated with HIV infection.[20] Syphilis progresses in three stages: primary, secondary and tertiary syphilis.

Primary syphilis occurs about three weeks after an exposure. The first symptom is a hard, painless, red-rimmed sore at the site of sexual contact. It disappears after 2-6 weeks.

'High rates of syphilis among STI patients are contributing to the spread of HIV-1 in India'. Sexually Transmitted Infections, 82(2): 121-6.

Secondary syphilis occurs one week to six months after the sore heals. Symptoms include widespread painless lesions, swollen lymph glands and a rash especially on the palms of the hands and soles of the feet.

Tertiary syphilis may show up years later when an infected person was not treated, even people who never had symptoms. As it remains in the body and may begin to damage the brain, nerves, eyes, heart, blood vessels, liver, bones, and joints. Late stage symptoms include poor muscle movements, paralysis, numbness, gradual blindness, and dementia. This damage may cause death. Standard treatment for syphilis is an injection of Benzathine penicillin. The dosage will depend on the stage of syphilis. A single dose of penicillin can cure a person who has syphilis for less than a year. Penicillin will kill the bacteria and prevent further damage, but it will not repair any damage already done.

Other Sexually Transmitted Infections. Other sexually transmitted infections commonly seen in HIV-positive women include chlamydia, gonorrhea, bacterial vaginosis. An important risk factor for HIV is the presence of other STIs. Women, vis-à-vis men are more likely to have untreated STIs as in women STIs are asymptomatic. Shame or fear of visiting a doctor is known to also prevent women from seeking treatment.[21] A study of 2,800 patients seeking STI treatment at clinics in Pune revealed that the

prevalence of HIV-1 infection was independently associated with the current or previous history of genital discharge in women.[22]

Cervicitis is an inflammation of the cervix. Several conditions can lead to cervicitis, including chlamydia, gonorrhea, trichomonas, bacterial vaginosis and cytomegalovirus (CMV). The treatment for cervicitis depends on its cause. If the women are having mild cervicitis, she may not notice any symptoms. However, when they do occur, they include a pus-like vaginal discharge with an odor, painful intercourse, spotting or bleeding after intercourse, and abdominal or back pain.

Pelvic Inflammatory Disease (PID) refers to inflammation in the upper genital tract. (The genital tract includes vagina, cervix, ovaries, uterus, and fallopian tubes.) PID is often caused by a number of common infections, including the sexually transmitted diseases (STDs) gonorrhea and chlamydia. PID starts after these infections travel up from the vagina to other organs in the body, where they can cause serious damage.

The most common symptoms of PID are a lower abdominal pain, irregular menstrual cycles, non-menstrual bleeding, vaginal discharge, and painful or frequent urinating.

Menstrual Changes in periods are common, for both HIV-positive and negative women. Many of these changes in HIV-positive women include irregular, heavier or lighter periods; worsening of symptoms from pre-menstrual syndrome (PMS); darkening of menstrual blood; and no periods for more than 90 days (amenorrhea). In some studies, amenorrhea was more frequent among women with CD4+ cell counts below 50.

It is not known exactly how HIV disease affects the reproductive system, hormones and menstrual cycles. It is also not known how the female hormones, estrogen and progesterone, interact with the immune system. Studies show that substance abuse, chronic illness and major weight loss can impair the hypothalmus. (The hypothalmus is the part of the brain that controls sex hormone secretion and can affect menstruation.) It is presumed that problems with a woman's immune system due to HIV cause changes in her hormones and results in menstrual problems.

HIV-positive women suffer heavy bleeding or painful periods can be associated with PID. They may also be explained by low platelets (the part of the blood involved in clotting and immune response) from HIV infection. Many treatments are used for platelet counts below 20,000, including AZT, corticosteroids, intravenous gamma globulins and platelet transfusions

Anemia is also common among HIV-positive women and can cause fatigue. Heavy and/or frequent menstrual bleeding (dismenorrhea) can cause anemia, or low red blood cells, which can also lead to amenorrhea. While the symptoms of dismenorrhea and amenorrhea are opposite, they both may be caused by anemia. Anemia can be treated with Epogen (Epoetin alfa).

Menopause-- the end of menstruation -- is a natural phase for women. It occurs because of natural changes that happen over time (usually 10-15 years) in a woman's reproductive system. These changes include the declining production of estrogen. Without enough estrogen, the uterine lining cannot thicken to prepare for an embryo. Therefore, no ovulation occurs (the passing of an egg from the fallopian tubes into the uterus walls) and menstruation stops.

Women usually experience menopause between the ages of 38-58, and most enter it around the age of 50.[23] There's some evidence that women with HIV may experience menopause earlier. This may be due to many factors such as anemia, lower hormone production, chronic illness, weight loss, anti-HIV drugs, street drugs and smoking. However, the symptoms of menopause appear to be the same for both HIV-positive and -negative women. They include heavier, irregular or missed periods; hot flashes; vaginal dryness; and other changes of the vagina. Many women undergo hormone replacement therapy (HRT) in order to replace the estrogen lost during menopause. As with any therapy, HRT has its risk and benefits.

Screening

Since women with HIV have high rates and generally more severe cases of Gynecological conditions, it's important to get frequent and regular screening.

A Pap smear is a standard part of the routine Gynecological exam. This is a test in which a doctor will collect cells from your cervix or anus. A Pap smear can detect any inflammation, and in most cases predict abnormalities in cervical cells. For women living with HIV, if CD4+ cell count is below 300 or has been dropping than a Pap smear every six months was done. Some women have an abnormal Pap smear; further evaluation with a *colposcopy* is done.

The Pap smear usually may cause a sensation that feels like pressure on the cervix. However, when there is tenderness or swelling, even a Pap smear can cause pain and discomfort. The problem with Pap smears is that 15-30% of the results that come back as "normal" is, upon doing further tests, actually abnormal. These are called false-negative results. In other words, abnormal cell growth that may need further examination or immediate treatment may pass undetected. This problem has led some health care providers to suggest colposcopy as a more accurate procedure, especially for HIV-positive women when early detection of GYN problems is critical.

A *Colposcopy* solution of diluted vinegar is applied to the cervix/anus to remove the mucus and highlight the abnormal cells. Using a light and a microscope (called a colposcope, or anoscope if they're looking at anal tissue), the doctor can look at the issue closely. The vinegar makes the abnormal cells white and the normal cells appear pink. Lesions, warts, and inflammation are usually visible during the colposcopy, however, it is difficult to determine if the changes are mild or severe. If abnormal cells are seen a biopsy is usually done.

A biopsy is when a small amount of tissue is taken from the area where abnormal cells are found. A biopsy can tell the difference between a mild lesion and a severe lesion. A biopsy can be uncomfortable and painful. Some women experience mild bleeding after the procedure.

2.10 Pregnancy is another area in which AIDS particularly affect women is in relation to reproduction. If a pregnant woman is infected with HIV, she can transmit the virus breast-feeding ring pregnancy, labor, and delivery, or breastfeeding. Women infected with HIV can pass on the virus to the fetus during pregnancy, via. Placenta, during childbirth. How likely this is, not yet clear.[1] preliminary reports from various studies suggest that the risk of an infection in a woman may be between 20-35 percent. The development of transmission may be related to the length of time a woman has been infected or whether she has to develop HIV related illness.HIV infection does not erase women's desires and hopes for sexual bonding, intimacy, and childbearing.

The stage of HIV infection in the pregnant mother is also important. If it in the early stages of HIV infection, pregnancy has little (if any) effect on HIV infection. However in the later stages of infection, especially if the mother has AIDS, the pregnancy can be more complicated. Without treatment, around 15-30 percent of babies born to HIV-infected women will become infected with HIV during pregnancy and delivery. A further 5-20 percent will become infected through breastfeeding.[24] Modern drugs are highly effective at preventing mother-to-child transmission of HIV. When combined with other interventions, including formula feeding, a complete course of treatment can cut the risk of transmission to below 2 percent.

Even where resources are limited, a single dose of medicine given to mother and baby can cut the risk in half. Risk Factor associated with HIV transmission from mother to child may be subdivided as follows:

- Natural and Virological factors.
- Placental factor.
- Fetal factor.
- Birth canal factor.
- Obstetric factor.
- Newborn factor.

As many as 30% of all pregnant women in sub-Saharan Africa face the twin miseries of having AIDS and risking passing the disease on to their babies. More than a million children are currently infected with the virus, and it is likely that this figure will increase 10-fold by the year 2000. The best way to prevent HIV infections in children is to prevent it in their mothers. The best way for the mothers to prevent it is by maintaining a mutually monogamous sexual relationship with an uninfected partner and using condoms. If a woman is already pregnant and infected, counseling is essential so that the woman

understands her risks.

Many women continue their pregnancies, and between 14 and 39% of the infants become infected. Infection rates increase when the mother is in the later stages of the disease or when the mother has other sexually transmitted diseases. AIDS babies live short miserable lives, and AIDS mothers have great difficulty caring for their children. Good medical care can improve a mother's health and her baby's chances of survival, but good medical care or even good counseling is not available in many countries. In some countries, abortion is offered to AIDS mothers, but other countries have strict abortion laws. Physicians in these countries are considering whether or not to perform induced abortions for health reasons on HIV-infected women.

It is suggested that during deliveries, physicians, midwives, and traditional birth attendants should use protective clothing if possible. In villages, midwives are advised to at least wash their hands and to avoid assisting a delivery if they have an open cut or sore. Sterile procedures after the birth and reducing birth complications that require transfusions will also help prevent the transmission of the disease. Breastfeeding of babies of mothers with AIDS is recommended in areas where the primary causes of infant death are infectious disease and malnutrition. In other words, where the baby's chances of dying if they are not breastfed are greater than their chances of contracting AIDS from the breast milk.

Experimental AIDS vaccines, administration of anti-HIV immunoglobulin, and treatment with zidovudine (AZT) during pregnancy are being tested, but the high cost of these therapies may make them unavailable in much of the world. Since many pregnant women do not receive prenatal care in developing countries, a promising prevention measure may be to give antibiotics late in the pregnancy or to wash the woman's birth canal with a disinfectant such as vinegar during labor and delivery. All of these treatment possibilities remain to be tested, and, meanwhile, the disease continues its deadly spread from mother to newborn child.

HIV and Breast Feeding the first reports indicating the possibility of HIV-1 transmission through breast milk were of breastfed infants of women who had been infected postnatally through blood transfusion or through heterosexual exposure.[25,26,27,28] Other reports related to infants with no other known exposure to HIV, whose source of infection was wet-nursing or pooled breast milk.[29]

The overall risk of mother-to-child transmission is associated with factors related to the virus, the mother, and the infant. Maternal RNA viral load in plasma has been strongly associated with this risk.[30,31] Although the risk increases substantially with increasing viral load, the virus can, however, be transmitted to the fetus or infant with even very low or undetectable levels of viral load, albeit rarely.[32] Similarly, at very high levels of HIV-RNA, the transmission does not always occur. Women with a low CD4+ cell count (under 200/mm3) near the time of delivery and those with the

severe clinical disease are about three times as likely to transmit as those who are less severely affected.[33]

HIV has been recovered from vaginal and cervical secretions of pregnant women[34] and from gastric secretions of infants born to HIV-seropositive women.[35] Delivery factors, such as vaginal delivery and duration of rupture of membranes, which increase contact between the infant and HIV-infected maternal body-fluids (cervicovaginal secretions and blood), have been linked with increased risk of transmission. RNA levels in plasma and in vaginal and cervical secretions are correlated; HIV-RNA, however, can be detected in the secretions even when plasma RNA is undetectable.[36]

TABLE 1

Estimated risk and timing of MTCT in the absence of interventions

Timing	Transmission rate
During pregnancy	5–10%
During labor and delivery	10–15%
During breastfeeding	5–20%
Overall without breastfeeding	15–25%
Overall with breastfeeding to six months	20–35%
Overall with breastfeeding to 18–24 months	30–45%

Table 1: *Rates vary because of differences in population characteristics such as maternal CD4+ cell counts, RNA viral load, and duration of breastfeeding*

2.11. Depression, Women, and HIV - Women are two times more likely to be depressed than men. While it is not clear why women suffer from depression so much more than men, there are several potential contributing factors. One reason used to explain the high rate of depression among women is the burden many women bear as the primary caregiver for family members. Often, women will care for others and not care properly for themselves. Other factors that may lead women to feel depressed include having a lower household income, less education, less social support, and a greater chance of being physically and/or sexually abused.

Women living with HIV+ are even more likely to suffer from depression than women in the general population. Although many HIV+ people live long, healthy, and full lives, learning that you are HIV+ is life-changing news that can be very difficult to hear. Some people feel overwhelmed, helpless, or

unable to cope with an HIV diagnosis. Others are afraid for their future health, or of disclosing their HIV status to friends and family. The stigma that many HIV+ women experience may lead to social isolation and feelings of loneliness. All of these feelings -- helplessness, anxiety, loneliness -- are key components of depression.

Many HIV+ women also experience large life stressors such as racial discrimination, poverty, violence, and single parenthood which can contribute to depression. An HIV diagnosis can simply add to the burden and to the chances of developing depression.

There is a direct connection between depression and reduced health for those living with HIV and it can cause serious problems. Specifically, HIV+ women who are depressed seek HIV care less often, have more trouble sticking with their HIV drug regimens, and have more rapid disease progression. If HIV positive women are experiencing symptoms of depression, she can miss doses, take the wrong dose, or take the dose with the wrong food or at the wrong time. Not taking your HIV drugs regularly can lead to the development of resistance, which makes HIV medications less effective at fighting the virus. This can cause CD4 cells to go down and/or viral load to go up.Even among HIV+ women with similar CD4 counts and viral loads, being depressed can double the likelihood of dying compared to having few or no symptoms of depression. For those women who made contact with a mental health provider, the risk of death was cut in half. It is important that depression is diagnosed and treated as quickly as possible to avoid serious problems.

Depression is a serious medical condition that affects thoughts, feelings, and the ability to function in everyday life. Depression can occur at any age. NIMH-sponsored studies estimate that 6 percent of 9-to 17-year-olds in the U.S. and almost 10 percent of American adults, or about 19 million people age 18 and older, experience some form of depression every year.[37,38]

Although available therapies alleviate symptoms in over 80 percent of those treated, less than half of people with depression get the help they need.[39] Receiving and living with a diagnosis of HIV can be stressful, overwhelming, and fearful at times. So it is not unusual for HIV+ people to feel down or anxious sometimes. Depression results from abnormal functioning of the brain. The causes of depression are currently a matter of intense research.

An interaction between genetic predisposition and life history appear to determine a person’s level of risk. Episodes of depression may then be triggered by stress, difficult life events, side effects of medications, or the effects of HIV on the brain. Whatever its origins, depression can limit the energy needed to keep focused on staying healthy, and it may accelerate HIV's progression to AIDS.[40] if these feelings are overpowering, disabling, or long-lasting, however, they may be a sign that the person is experiencing a condition known as depression. Compared to sadness, depression is more intense, lasts longer (more than two weeks), and interferes with your day-to-day ability to function.

In medical language, depression is a diagnosis based on having a certain number of specific symptoms (from the list below). Depression is not a normal part of being HIV+ and can cause some serious health problems. Depression, faster declines in the CD4+ count and disease progression and more complex HIV-related symptoms tend to be more common in women.[41]

Despite universal free access to antiretrovirals, women are significantly less likely to start highly active ART (HAART) treatment regimens than men[42,43] and demonstrate lower adherence to ART even after adjusting for factors such as demographics, substance abuse, clinical history and health correlate.[44] Women present more HARRT side effects leading to more complex side-effect-related treatment decisions.[45] Differences in disease progression for HIV-positive men and women may be critical in understanding how men and women vary in the selection of a coping strategy and experience of depressive symptoms.

Treatments of Depression include **psychotherapy, social support, medication, alternative therapies**, or any combination of these. While it is true that depression can get better on its own, this can take months or even years. Treatment will likely shorten the time it takes to feel better and keep the women from losing a job, a relationship, or even her life.

Psychotherapy involves talking to a trained professional about what you are experiencing. Psychotherapy is also known as "talk therapy" or personal counseling. The therapist provides support and helps you to understand what is troubling. While most psychotherapy occurs one-on-one, group therapy is also helpful for some people.

Social Support - It may also be helpful to seek the support of other HIV+ women through support groups or peer counseling. Social and emotional support, from friends and family, can also avoid depression which is very important for HIV + women who are living with a serious illness. Members of a social support network can help with chores like shopping or housework and act as caregivers if you get sick.

Antidepressant Medications- Antidepressant medications are often prescribed for depression or anxiety and have been shown to help decrease symptoms for some HIV+ women. Care should be used when taking antidepressant medications with HIV drugs. Many of the popular kinds of antidepressant and anti-anxiety drugs can interact with some HIV drugs. Generally, the safest type of antidepressants for use with HIV drugs is selective serotonin reuptake inhibitors (SSRI's) such as Celexa (citalopram), Lexapro (escitalopram), Luvox (fluvoxamine), Prozac (fluoxetine), Paxil (paroxetine), and Zoloft (sertraline). A popular herbal antidepressant called **St. John's Wort** should not be taken, as it affects the immune system and interacts with many HIV drugs.

Other Treatments- Meditation, massage, yoga, breathing, and relaxation exercises are all alternative therapies that may help you feel better. Acupuncture and acupressure therapies may help

reduce stress and improve patient mood. Doctors advice good nutrition and exercise, no matter which treatments patient choose.

References :

1. ***IGNOU*** *"Women and HIV AIDS" pg 5-6*
2. WHO- Sexually Transmitted Diseases, Initiative for Vaccine Research (IVR); Disease Burden
3. www.aidsmed.com.,women *HIV/AIDS opportunistic and another disease*
4. ***Centers For Disease Control and Prevention (CDC),*** http://www.cdc.gov/Features/WomenGirlsHIVAIDS/
5. ***The Well Project****: opportunistic Infection conference, pg 3-4.*
6. ***Panda S, Sarkar S, Mandal BK, Singh BK Th, Singh KL, Mitra DK, Sarkar K, Tripathy SP, Deb BC****. 1994. The epidemic of Herpes zoster following HIV epidemic in Manipur, India. J of Infection. 28 (2).*
7. ***Grulich AE, van Leeuwen MT****, Falster MO, Vajdic CM. The incidence of cancers in people with HIV/AIDS compared with immunosuppressed transplant recipients: a meta-analysis. Lancet 2007; 370(9581):59–67.*
8. ***Engels EA, Pfeiffer RM, Goedert JJ,*** *Trends in cancer risk among people with AIDS in the United States 1980–2002. AIDS 2006; 20(12):1645–1654.*
9. Doctors can do a brain biopsy Radiation therapy is the most common treatment for AIDS-related CNS lymphoma.
10. ***Engels EA, Biggar RJ, Hall HI****, et al. Cancer risk in people infected with human immunodeficiency virus in the United States. International Journal of Cancer 2008; 123(1):187–194.*
11. ***Grogg KL, Miller RF, Dogan*** *A. HIV infection, and lymphoma. Journal of Clinical Pathology 2007; 60 (12):1365–1372.*
12. ***Silverberg MJ, Abrams DI. AIDS****-defining and non-AIDS-defining malignancies: cancer occurrence in the antiretroviral therapy era. Current Opinion in Oncology 2007; 19(5):446–451.*
13. ***Engels EA, Pfeiffer RM, Goedert JJ,*** *et al. Trends in cancer risk among people with AIDS in the United States 1980–2002. AIDS 2006; 20(12):1645–1654.*
14. ***Grogg KL, Miller RF, Dogan A****. HIV infection, and lymphoma. Journal of Clinical Pathology 2007; 60 (12):1365–1372.*
15. ***McGinnis KA, Fultz SL, Skanderson M,*** *et al. Hepatocellular carcinoma and non-Hodgkin's lymphoma: the roles of HIV, hepatitis C infection, and alcohol abuse. Journal of Clinical Oncology 2006; 24(31):5005–5009.*
16. ***AIDS Control and Prevention (AIDSCAP) Project of Family Health Internal,*** *The Francois-Xavier Bagnoud Center for Public Health and Human Rights Of the Harvard School of Public Health, UNAIDS. The Status and Trends of the Global HIV/AIDS Pandemic. Final Report July 5-6, 1996.*
17. Raviglione MD, Snider DE, Kochi A. Global epidemiology of tuberculosis: morbidity and mortality of a worldwide epidemic. JAMA 1995;273:220-226.
18. ***Reid A, Scano F, Getahun H, et al.*** *Towards universal access to HIV prevention, treatment, care, and*

support: the role of tuberculosis/HIV collaboration. Lancet Infect Dis 2006;6:483-495

19. ***Reynolds SJ, Risbud AR, Shepherd ME, Rompalo AM, Ghate MV, Godbole SV, Joshi SN, Divekar AD, Gangakhedkar RR, Bollinger RC, Mehendale SM. (2006)***.
20. ***PAHO. 2002.*** *The UNGASS, Gender and Women's Vulnerability to HIV/AIDS in Latin America and Carribean. Washington: Pan-American Health Organisation.*
21. ***Rodrigues JJ, Mehendale SM, Shepherd ME, Divekar AD, Gangakhedkar RR, Quinn TC, Paranjape RS, Risbud AR, Brookmeyer RS, Gadkari DA, et. al. (1995).*** *'Risk factors for HIV infection in people attending clinics for sexually transmitted diseases in India'. British Medical Journal, 311: 283-6.*
22. ***Gynecological Conditions Chart*** *in Women with HIV/AIDS ,Fact Sheet April, 1999*
23. ***De Cock et al (2000)*** 'Prevention of mother-to-child HIV transmission in resource-poor countries: translating research into policy and practice'*, JAMA 283(9), March*
24. ***Public Health Service Task Force (2009)*** 'Recommendations for use of antiretroviral drugs in pregnant HIV-infected women for maternal health and interventions to reduce perinatal HIV transmission in the United States'
25. ***Written for BabyCenter India****, Approved by the* BabyCenter India Medical Advisory Board *, Adapted August 2008*.
26. ***Palasanthiran****. Breastfeeding during primary maternal immunodeficiency virus infection and risk of transmission from mother to infant. Journal of Infectious Diseases, 1993, 167:441–444.*
27. ***Van de Perre****. Postnatal transmission of human immunodeficiency virus type 1 from mother to infant. A prospective cohort study in Kigali, Rwanda.New England Journal of Medicine, 1991, 325:593–598.*
28. ***Stiehm R, Vink P****. Transmission of human immunodeficiency virus infection by breastfeeding. Journal of Pediatrics, 1991, 118:410–412.*
29. ***Hira SK****. Apparent vertical transmission of human immunodeficiency virus types 1 by breast-feeding in Zambia. Journal of Pediatrics, 1990, 117: 421–424.*
30. ***Mayaux MJ, Dussaix E, Isopet J et al****. Maternal virus load during pregnancy and mother-to-child transmission of human immunodeficiency virus type 1: the French perinatal cohort study. Journal of Infectious Diseases, 1997, 175:172–175.*
31. ***European Collaborative Stud****y. Maternal viral load and vertical transmission of HIV-1: an important factor but not the only one. AIDS, 1999, 13: 1377–1385.*
32. ***European Collaborative Study****. HIV-infected pregnant women and vertical transmission in Europe since 1986. AIDS, 2001, 15: 761–770.*
33. ***Leroy V et al.*** *Twenty-four months efficacy of a maternal short-course zidovudine regimen to prevent mother-to-child transmission of HIV-1 in West Africa. AIDS, 2002, 16: 631–641.*
34. ***John GC et al****. Genital shedding of human immunodeficiency virus type 1 DNA during pregnancy: Association with immune suppression, abnormal cervical and vaginal discharge and severe vitamin A deficiency. , Journal of Infectious Diseases, 1997, 175:57–62.*
35. ***Loussert-Ajaka I et al.*** *HIV-1 detection in cervicovaginal secretions during pregnancy. AIDS, 1997, 11:1575–1581.*
36. ***Kovacs A et al.*** *Determinants of HIV-1 shedding in the genital tract of women. Lancet, 2001; 358: 1593–*

1601.

37. ***Shaffer D, Fisher P, Dulcan MK,*** *The NIMH Diagnostic Interview Schedule for Children Version 2.3 (DISC-2.3): description, acceptability, prevalence rates, and performance in the MECA Study. Methods for the Epidemiology of Child and Adolescent Mental Disorders Study. Journal of the American Academy of Child and Adolescent Psychiatry, 1996; 35(7): 865-77.*
38. ***Regier DA, Narrow WE, Rae DS,*** *The de facto mental and addictive disorders service system. Epidemiologic Catchment Area prospective 1-year prevalence rates of disorders and services. Archives of General Psychiatry, 1993; 50(2): 85-94.*
39. ***National Advisory Mental Health Council.*** *Healthcare reform for Americans with severe mental illnesses. American Journal of Psychiatry, 1993;150(10): 1447-65.*
40. ***Page-Shafer K, Delorenze GN, Satariano W, et al****. Comorbidity and survival in HIV-infected men in the San Francisco Men's Health Survey. Annals of Epidemiology, 1996; 6(5): 420-30.*
41. ***Hewitt RG, Parsa N, Gugino L (2001)*** *The role of gender in HIV progression. AIDS Read 11(1):29–33*
42. ***Anastos K, Gange SJ, Lau B, Weiser B, Detels R, Giorgi JV 2000****)Association of race and gender with HIV-1 RNA levels and immunologic progression. J Acquir Immune Defic Syndr 24:218–226*
43. ***Mocroft A, Katlama C, (2000).*** *AIDS across Europe, 1994–98: the EuroSIDA study. Lancet 356: 291–296.*
44. ***Turner 2003.*** *A framework for vulnerability analysis in sustainability science. Proc. Nat. Acad. Sci. 100 (14): 8074-8079.*
45. ***Kremer H, Sonnenberg-Schwan U, Arendt G, Brockmeyer NH, Potthoff A, Ulmer A, Graefe K, Lorenzen T, Starke W, Walker UA, German Competence Network HIV/AIDS (2009)*** *HIV or HIV-therapy? Causal attributions of symptoms and their impact on treatment decisions among women and men with HIV. Eur J Med Res 14(4):139–146*

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