**Aquired Immunodeficiency Syndrome**

**Factors increasing HIV transmission from mother to infant**

Several factors lead to an increased risk in the transmission of HIV from the mother to the child. The transmission occurs during pregnancy, during the breastfeeding period and during the delivery period. The most common transmission is the mother to child transmission and it is a major factor leading making children get infected with HIV. The patient in the case study has been asymptomatic and she was not taking any antiretroviral medication but she wanted to get a child. One factor leading to the transmission of HIV from mother to the child is a high viral load (Grede, De Pee and Bloem, 2014).  Patience has a viral load of 850 which is considered to be low.  This means that the amount of genetic material (RNA) in a milliliter of her blood sample is considered to be low. This shows that the transmission of HIV to her newborn is considered to be low. The transmission of HIV during this period of time can occur during labor as well as during the time of delivery.

Another risk factor of transmission is a low CD4 count in her blood.  Her CD4 count was estimated to be 380/µL showing that the T-lymphocytes in her white blood cells are adequate to give her body defense against pathogens in her body. This shows that she will have a lower risk of transmission of HIV to her baby. Older age of the mother can also increase the risk of transmission of HIV to the child. Her age is 29 and this shows that she is able to have a lower risk of transmission of HIV. Lack of having an HIV therapy during delivery period and also during pregnancy can also lead to increase in the rate of transmission of HIV to the newborn (Grede, De Pee and Bloem, 2014). This is because the doctors will not be able to establish the viral loads and the CD4 counts and that can increase the risk of transmission of the disease.

Having advanced stage of the HIV disease can also lead to increase in the disease. This is because having advanced HIV can increase the number of viruses per cubic milliliter of blood and that can lead to spread of the disease to the newborn. Patience can also contract HIV to her newborn if she has some of the virginal infections such as the bacterial vaginosis (Grede, De Pee and Bloem, 2014). This can lead to increase in the rate of transmission of HIV in the body and that can cause inflammation of the membranes separating the fetus and the mother during the period of giving birth. This inflammation of the membrane is called chorioamnionitis and it is caused by a bacterial infection.

**HAART therapy**

This is a therapy composed of different medication classes usually prescribed by a physician based on some of the factors such as viral load, the CD4+, the symptoms of the disease as well as the strain of the virus (Ramana, 2014). Undergoing the therapy can lead to massive control of the viruses in the body as well as delaying and prevention of the progression of the HIV to AIDS. Because the use of HAART therapy cannot mitigate the HIV in the body completely, it has to be taken daily and that can be important in prolonging the survival of the people infected with the virus. HAART therapy increases the number of white blood cells count in the body and reduces the amount of viruses in the body per cubic milliliter of blood and that can assist in the management of the HIV pandemic effectively (Ramana, 2014).

Depending on the CD4 count of Patience, there should be the use of specific medications. The use of ART is recommended for the mothers with a count of less than 350 cells/mm3 of CD4 despite their clinical staging. Her CD4 count shows that she has to be involved in the ARV prophylaxis and that would be effective in creating an effect in her body. During pregnancy, it is highly recommended that the patient has to take AZT and 3TC with a combination of the use of NNRTI. The special combination of the NNRTI used includes the use of NVP or the use of EFV (Ramana, 2014). This would be effective in reducing the morbidity rate as well as the mortality rate of Patience as a result of TB. However, it is recommended that the patient is not supposed to use EFV during the first stages of pregnancy but it can be used in the second stage as well as the third stage of the disease. This is because the use of EFV can lead to neural tube defects in the body. The neural tube closure usually occurs during the first time 28 days in the gestation and few pregnancies are not recognizable during this period of time.

**Opportunistic infections and risk factors**

The opportunistic infections are the types of infections that usually occur in individuals with weak immune systems especially with the people having HIV (Masur et al., 2014). One of the risk factors making people with HIV prone to HIV is the lower CD4 count. The lower number of white blood cells in a milliliter of blood makes the immune system to be low and that can lead to the introduction of opportunistic infections to the various patients. Since patience has not been taking her medication and she has been having the disease for 9 years, the risk of contracting the opportunistic infections such as toxoplasmosis, pneumonia, candidiasis in the esophagus, Kaposi sarcoma which is a type of cancer and also cryptococcal meningitis (Masur et al., 2014). Another risk factor for contracting the opportunistic infections is not having the ART. Patience has not been taking her medication and therefore she has a higher risk of contracting the infection. Social factors like nutrition, poverty and overcrowding can also lead to increased risk of contracting the opportunistic infections because individuals can be involved in risk factors like smoking which reduce the CD4 count in the body and increasing the prevalence of the disease.

**References**

Grede, N., de Pee, S., & Bloem, M. (2014). Economic and social factors are some of the most common barriers preventing women from accessing maternal and newborn child health (MNCH) and prevention of mother-to-child transmission (PMTCT) services: a literature review. *AIDS and Behavior*, *18*(5), 516-530.

Masur, H., Brooks, J. T., Benson, C. A., Holmes, K. K., Pau, A. K., & Kaplan, J. E. (2014). Prevention and treatment of opportunistic infections in HIV-infected adults and adolescents: Updated Guidelines from the Centers for Disease Control and Prevention, National Institutes of Health, and HIV Medicine Association of the Infectious Diseases Society of America. *Clinical infectious diseases*, *58*(9), 1308-1311.

Ramana, K. V. (2014). Effect of highly active antiretroviral therapy (HAART) on human immunodeficiency virus disease pathogenesis and progression. *American Journal of Public Health*, *2*(3), 68-74.