

## HIV and Pregnancy: A Short Review

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### Abstract

The incidence and existence of human immunodeficiency virus concerning women of reproductive age continues to increase globally. The care of HIV-infected women is not simple and must be focused on including the current and future health of these women, the minimization of the risk of maternal–infant transmission and the maintenance of the well-being of the fetus and neonate. Many maternal and obstetrical factors can affect the vertical transmission. The answer to this problem is the optimal medical and obstetrical care.

**Keywords:** Pregnancy; HIV; Vertical transmission

### Introduction

The human immunodeficiency virus continues to be expanded around the world causing an estimated 16,000 new infections per day [1]. 2.1 million women and 590,000 children below age of 15 were newly infected through their mothers before or during birth or through breastfeeding [1].

Perinatal transmission accounts around >90% of HIV infections in infants and children and is responsible for almost new HIV infections in preadolescent children. Perinatal transmission is also responsible for >90 % of pediatric AIDS in the United States [2]. The possible mechanisms which are responsible for vertical transmission might be the transplacental microtransfusions of maternal blood into the fetal circulation during contractions, labor and separation of the placenta before clamping of the umbilical cord [3], the ascending infection through the cervix after rupture of the amniotic membranes, which affects the amniotic fluid and the absorption of the virus through the infant's immature digestive tract. A pregnancy in an HIV-infected woman is considered a high-risk pregnancy. National guidelines according the deal of HIV-infected women propose intensive ultrasound screening. In case of fetal anomaly, invasive prenatal testing can be offered [4]. The infections' rate which is presented during pregnancy indicates the stage of HIV disease and degree of immunosuppression. Pneumocystis carinii pneumonia appears with more severe clinical symptoms [5].

Furthermore, there are reports concerning HIV associated infections such as candidiasis and urinary tract infections presented with more severe clinical symptoms during pregnancy. Many obstetrical complications can occur in HIV-infected pregnant women. Delivery before the 37<sup>th</sup> week of gestation is correlated with increased HIV transmission rate [6]. Low birth weight (<than 2500 g) is presented as a co-factor associated with vertical transmission and reflects the rate of intrauterine infection. Additionally, it reflects the placenta insufficiency or severe HIV infection.

In developed countries, with access to medical opportunities, HIV infection is not associated with maternal mortality or morbidity. On the contrary, in many countries in Africa, HIV infection plays a significant role in maternal mortality [7]. HIV-infection during pregnancy is associated with other viral diseases such as influenza and varizella, in which the host response is largely cell mediated [8].

The incidence of HIV infection in the United States varies from 40,000 to 56,300 annually [9,10]. Around 25% of HIV infected persons do not know their medical condition [11]. The biological interaction between HIV and pregnancy is not well understood globally. It has been said that pregnancy can increase the HIV presence, because

of the correlation between its presence and the immunosuppression [12,13]. There are many pathological connections which can clear out this correlation. To begin with, we must give a great attention to the compromised immune status and general poor health of HIV-infected women which allow them to become more vulnerable to infections and mostly to puerperal sepsis [14]. Additionally, HIV related thrombocytopenia may lead to increased risk of hemorrhage. Moreover, social factors can be exacerbated in HIV-infected women because of the discrimination, the stigma and the social isolation facing every day as members of a society [15].

### Discussion

According to the World Health Organization (WHO) an estimated 15, 7 million women and 2, 1 million children under the age of 15 living with AIDS [16]. Generally, the main focus on the management of pregnant women with HIV infection still remains the continuance of the antiretroviral therapy during the pregnancy regardless of viral load and CD4 cell in order to minimize the mother-to-child transmission [17-19]. In 2006, the World Health Organization (WHO) guidelines proposed relevant agents concerning triple therapy, focusing on decreased rates of mother-to-child transmission (MTCT) than monotherapy one [18,19].

Globally, combination of zidovudine/lamivudine with a non-nucleoside reverse transcriptase inhibitor (NNRTI) or a Protease Inhibitor (PI) is the gold standard as far as HIV infected pregnant women regards. On the contrary, HIV-infected women with intolerance to zidovudine because of low count of red plattes or resistance to drugs, they are able to use another drug method.

During pregnancy, when the CD4 lemphocytes status decreases to <250 cells/mm<sup>3</sup>, the optimal choice would be nevirapine. There are several cases reported with developed fatal rash and liver toxicity [20].

The principle use of antiretroviral therapy represents the cornerstone concerning HIV-infected women, not only for their own treatment but also for mother-to-child transmission (MTCT). Taking into consideration and starting an antiretroviral therapy to HIV-

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Received September 01, 2014; Accepted October 29, 2014; Published October 31, 2014

Citation: Sofoudis C (2014) HIV and Pregnancy: A Short Review. J Clin Case Rep 4: 436. doi:10.4172/2165-7920.1000436

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infected pregnant women, we should focus on the offering data from the antiretroviral drugs. Deriving from the global literature, the number of the HIV-infected pregnant women under antiretroviral therapy has dramatically increased and our concern must be on the possible side-effects which can be the reason for early miscarriage, mainly during the first trimester. This period of time is vulnerable to teratogenic effects because of the completion of the organogenesis [21,22].

The classification of congenital abnormalities is based on WHO criteria and contains any major formed abnormality, or any combination of two or more abnormalities, developing in fetuses below the 20<sup>th</sup> week of gestation. The most significant abnormalities are the following: polydactylism, malformed ear, abnormalities in the feet, minor mouth abnormalities, undescended testes, accessory nipple, spinal hair patch, strawberry nevi, skin tag, and subependymal cysts [23].

There is a strong belief that a positive HIV infected woman should perform a full physical examination even on her first medical appointment to her physician. A Pap-smear should be performed if the woman has not a recent one. Colposcopy must be performed in all cases of atypical Pap smear.

According to the recent bibliography, it is suggested that elective caesarian section can decrease the mother-to-child transmissions rate [24]. This form of delivery can cause maternal complications and deals with great postoperative morbidity [25]. Prophylactic antibiotic seems to be necessary during the time of delivery. It must be given great attention to postpartum complications such as infections from urinary tract and episiotomy. Follow up care and methods of contraception are mandatory for these women.

## Conclusion

It is well known that a rapidly increase of number of HIV-infected pregnant women should be mentioned. The main medical goal remains the primary detection of acute HIV infection and the rapidly diagnosis of clinical symptoms. Great attention must be given to mother to child transmission and to postpartum care. More research must be conducted in order to improve the time line of HIV infection from first exposure to development of anti-HIV-1 antibodies and the implications concerning the early detection.

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