

Special Care Issues of Women Living with HIV/AIDS

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Globally over half of adults living with HIV or AIDS are women.¹ In the United States, more than one quarter of all new HIV and AIDS diagnoses are women, and about a third of people living with HIV or AIDS are women.² In Rhode Island in 2006, 25% of persons living with HIV were women. Most Rhode Island women living with, or at risk for, HIV infection, do not themselves have high-risk sexual behaviors, but are vulnerable because of the past or present risk behavior of their partners, as roughly 90% of the HIV transmission to women occurs via heterosexual sex. African American and Hispanic women in Rhode Island are especially vulnerable to HIV: they represent only 14% of Rhode Island's female population, but 73% of new HIV cases among women between 2000 and 2006.³ Health care providers should be aware of the special care needs of women living with HIV.

HIV AND PREGNANCY

HIV can be transmitted antepartum, intrapartum, and postpartum. About two thirds to three quarters of mother-to-child transmissions occur during or close to the intrapartum period.⁷ Without combination ART, vertical transmission ratios range from 25-35%. With the advent of **highly active antiretroviral therapy (HAART)**, vertical transmission rates in the United States have dropped to 1-2%. The most important determinant of mother-to-child transmission is the maternal plasma HIV load, but other factors, including low CD4 count, poor maternal nutrition, concomitant sexually transmitted diseases,⁸⁻¹¹ prolonged rupture of membranes, invasive fetal monitoring, chorioamnionitis,^{10,12} and prematurity, also contribute to perinatal HIV transmission.^{13,14}

Women of child bearing age with known HIV seropositivity are choosing to become pregnant in small but ever increasing numbers, as the risk of transmitting HIV to their children becomes statistically less. Between 1982 and 2006,

24 children in Rhode Island contracted HIV via mother-to-child transmission. With the administration of HAART to all pregnant HIV-infected women as recommended by most experts, only 3 cases of documented mother-to-child HIV transmission occurred in Rhode Island in the last 5 years; in none of these cases had the mother received the recommended antenatal treatment.

Unfortunately, there are still many women in Rhode Island who are diagnosed with HIV only during pregnancy. State laws have recently required "opt out" testing of the mother during pregnancy, meaning that HIV testing is part of routine prenatal testing unless the patient declines. After the state changed from "opt-in" to "opt-out" HIV testing, the rate of HIV testing of pregnant women increased from 53% to 93%. In addition, protocols are being put in place at Women & Infants' Hospital, the busiest delivery center in the state, to require HIV testing of the baby immediately after birth if there is no documented HIV test for the mother. The goal is always to have 0% transmission in order to limit the epidemic to the current generation. Information on the Rhode Island state law regarding testing of pregnant women for HIV is available at <http://www.rilin.state.ri.us/BillText/BillText07/SenateText07/S0841Aaa.htm>

HIV AND HUMAN PAPILLOMAVIRUS

Over 100 types of the DNA **Human papilloma virus (HPV)** have been identified. Between 30-40 types are sexually transmitted and infect the genital area of both men and women. Cervical HPV infections are more prevalent and persistent in HIV-infected women, particularly among women with a lower CD4 cell count. The Miriam Hospital is one of four nationwide sites participating in the **Study to Understand the Natural History of HIV/AIDS (SUN)** in the era of HAART, funded by the **Centers for Disease Control and Prevention (CDC)**. In the SUN, the overall prevalence of anal and cervical HPV infection was simi-

lar in both genital and anal areas, 92% and 86% respectively. However, high-risk anal HPV types were significantly more prevalent in the anal canal with a prevalence of 86%, compared with the cervical prevalence of 64%.

Studies evaluating the impact of HAART on cervical and anal HPV infection and cervical and anal cytologic changes have been inconclusive. While HAART does not seem to be associated with clearance of HPV, some studies have indicated that HAART was associated with regression of cervical disease,⁴ and others have not found such an association.⁵ Epidemiologic surveys indicate that the overall incidence of invasive cervical cancers have remained unchanged or increased slightly in the era of HAART. Anal cancers are increasing among HIV-infected women.⁶

The **Food and Drug Administration (FDA)** recently approved a new quadrivalent HPV vaccine that targets HPV types 6, 11, 16, and 18, for use in girls and women 9 to 26 years of age. This vaccine includes HPV types that are the most common cause of cervical warts (HPV types 6 and 11) and cervical and anal cancer (HPV types 16 and 18). In the general population, the vaccine is highly effective in preventing infection and diseases caused by the types included in the vaccine. The safety, immunogenicity, and efficacy of the HPV vaccine in HIV-infected adults is being studied through the AIDS Clinical Trials Network; The Miriam Hospital is one of the sites participating in the study.

HIV AND MENOPAUSE

The number of women expected to experience menopause in the US is escalating with increasing life expectancy (81.7 years at present).¹⁵ Similarly, HIV-infected women on HAART are living longer, and a growing population of women will experience menopausal transitions while HIV-infected.

Age at natural menopause among white women from 1960 to 1982 was on average at 51 years.¹⁶ More recent

data suggest an even earlier onset (46 to 48 years old) of menopause in women with and at risk for HIV infection.¹⁷ Several predictors of earlier age at menopause, including substance use, tobacco smoking, low relative body weight, low socioeconomic status, depression, and African American ethnicity, are common among HIV-infected women, a possible basis for HIV-infected women having menopause at an earlier age.¹⁷

There are conflicting data on the effect of HIV on menopausal symptoms. Factors that can influence menopausal symptoms, including smoking, stress, drug use, low body mass index, and race/ethnicity, are also relatively more prevalent among HIV-infected women. In order to evaluate menopausal issues among HIV-infected women in Rhode Island, a Menopause Clinic at The Miriam Hospital was established in 2004.

A woman was classified perimenopausal if she had signs and symptoms associated with estrogen deficiency, irregular menses, with or without FSH/LH elevation. A woman was considered menopausal if she was status-post bilateral salpingo-oophorectomy with or without hysterectomy, or if she had no menses for more than 1 year with elevated FSH/LH. Medical history, DEXA scan, mammogram, Pap smears, and blood work were collected on 77 women over the age of 45.

Mean age of women in the Menopause clinic was 49.9 years (42% were Caucasian, 33% were African-American, and 23% were Latino). These women had well controlled HIV infection with a median CD4 count of 416 K/ μ L, and were mostly on HAART with an undetectable plasma viral load (PVL) (<75 copies/mL). One third of the women were perimenopausal and 63% had experienced natural or surgical menopause. Most commonly reported menopausal symptoms were hot flashes (63%), night sweats (61%), and difficulties with sleeping (50%). Mammogram results for 57 women were all normal. Recent Pap smears of 76 women showed 69% normal, 6% ASCUS, 20% LGSIL, and 5% HGSIL.

Among 51 women who received DEXA scan results, 16% and 55% were diagnosed with osteoporosis and osteopenia, respectively. This prevalence

is more than three times greater compared with HIV-uninfected women in the same age group in the United States.¹⁸ The pathogenesis of the reduced bone mineral density noted in HIV-infected individuals is most likely multifactorial. Traditional risk factors for osteoporosis, including smoking, menstrual irregularities (oligomenorrhea and amenorrhea), substance abuse, and low body weight are more common in the HIV-infected population. In HIV-infected women in Rhode Island, the median weight was 161 lb and 15% weighted >200 lb. Low body weight is therefore not likely to play a role in the high prevalence of osteoporosis. Both HIV infection and certain antiretroviral therapy regimens have been implicated in the pathogenesis of osteoporosis, and longer follow-up will be needed to clarify factors associated with the high prevalence of osteoporosis that we noted in HIV-infected women in Rhode Island.

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