Before, Between & Beyond Pregnancy
The National Preconception Curriculum and Resources Guide for Clinicians

Guidance for Preconception Care of HIV-Infected Women

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This guidance should not substitute for clinical judgments or expert consultation

Overview of Preconception Care of the Woman Infected with HIV

- Potent antiretroviral therapy and advances in treatment of HIV related infections have improved the life expectancy for women with HIV infections.[1,2]
- Women who were infected in their late teens or early twenties are surviving well into their reproductive years. Even some women who were perinatally infected are now reaching their reproductive years.
- Women with HIV who are optimally treated during pregnancy have a less than 2% chance of vertical transmission of HIV to the infant.[3]
- Pregnancy has not been shown to have an adverse effect on the course of HIV disease.[4]
- Given that HIV has become a more manageable chronic condition, more women with this disease now desire fertility.[5,6]
- Goals of preconception counseling include:[7]
    1. Improve the health of HIV-infected women before conception
    2. Identify risk factors for adverse maternal or fetal outcomes
    3. Prevent transmission to infant and sexual partners
- Combination drug regimens are considered the standard of care both for the treatment of HIV infection and for prevention of perinatal HIV transmission.[1]

Counseling and Care Guidance

- Preconception counseling often involves more than just one visit.[1,2]
- Disclosure of HIV status to partner is strongly encouraged.
- Partners are encouraged to participate and be involved with prenatal care.
- Discussion of contraceptive methods needs to be discussed before and after pregnancy is achieved.
- Screening for smoking, alcohol, and substance use should be performed and assistance in treating these risks should be offered.[1,2]

- Because HIV infection can be associated with depression, a psychiatric history and screening for depression should be performed, and those with a positive history should be referred to appropriate psychological evaluation.[2]
- Genetic and reproductive histories should be obtained with appropriate follow-up as necessary.
- Folic acid supplementation should be initiated prior to conception.
- Optimal management of comorbid medical conditions should be practiced with emphasis on diabetes, hypertension, systemic lupus erythromatosis, and thyroid diseases.[1,2]
- Consultation by a maternal fetal medical specialist or other health care provider experienced in the management of HIV disease during pregnancy should be obtained as necessary.
- Prior to pregnancy the following tests are recommended.[1,2]
    - Both partners should be screened for sexually transmitted diseases.
    - HIV-1 genotyping for resistance testing.
    - Screening for varicella, rubella, rubeola, mumps, cytomegalovirus, toxoplasmosis, hepatitis B and C, and tuberculosis.
    - Baseline evaluation of complete blood cell count, renal and liver function testing.
    - Vaccines for influenza, pneumococcal infection, varicella, Hepatitis B should be offered prior to conception and administered as appropriate.
    - Screening for opportunistic diseases as necessary.

Counseling and Care Guidance for Discordant Couples

- Barrier methods of contraception are the most efficacious method in reducing transmission of HIV and other sexually transmitted diseased in sexually active couples.[8]
- Barrier contraception methods will reduce the spread of HIV.
- The use of dual-contraceptive methods such as condoms and intrauterine device or oral contraceptive pills is ideal in preventing the transmission of STI and preventing pregnancy.[9]

In discordant couples seeking pregnancy the goal is to minimize the risk of HIV transmission while optimizing the chance of conception.[10,11] The use of condoms to prevent the transmission of HIV to the HIV negative partner is always encouraged. For those patients who despite this warning intend to conceive without the use of assisted reproductive technologies, the following should be considered to help decrease the risk of sexual transmission of HIV:

- Transmission rates are directly proportional to viral load in discordant couples, therefore clinicians should consider starting the HIV positive patient on antiretrovirals during the preconception period to reduce their viral load and decrease the risk of sexual transmission of HIV
- Concurrent sexually transmitted infections have been shown to increase the risk of HIV transmission, therefore prior to conception a couple seeking fertility should be evaluated and treated for any concurrent sexually transmitted diseases, including bacterial vaginosis.
- Risk of transmission of HIV infection must be discussed with differing methods of achieving conception.
- Ovulation kits can help in determining the best window for fertility, to decrease the number of unprotected coital acts.

- In seropositive women with uninfected partners the following options are available:
    1. Intrauterine insemination
    2. Timed ovulatory intercourse (after clearly discussing the risks of sexual transmission of HIV)
- In uninfected women with seropositive partners the following options are available:

    1. Artificial insemination of the female with washed sperm from her partner.
    2. *In vitro* fertilization (IVF) with prepared sperm from her partner.
    3. Artificial insemination of the female with sperm from an HIV negative donor.
    4. Timed ovulatory intercourse (after clearly discussing the risks of sexual transmission of HIV) .
- In seropoconcordant couples the use of barrier methods is recommended secondary to the possible transmission of drug resistant HIV.
    1. Assisted reproductive techniques and timed ovulatory intercourse may help reduce these risks.

Antepartum Course and HIV infection

- Women of childbearing age should be prescribed antiretroviral medications that are effective in reducing perinatal transmission and avoid those with known teratogenesis. (Department of Human Services [DHHS] perinatal guidelines).[1,12]
    - Antiretroviral regimens including efavirenz should be avoided in women trying to conceive and during early pregnancy secondary to concerns of teratogenesis with exposure in the first trimester.[13]
    - The choice of initial antiretroviral medication will depend of multiple factors including coinfections, resistance testing, toxicity profile.[1]
- Women seeking pregnancy who are on anti-retroviral medication should aim for stable maximally suppressed maternal HIV-1 levels before conception.[1,2]
- If a women does not meet the recommendation for initiating antiretroviral therapy prior to pregnancy (USPHS guidelines), then clinicians can consider delaying the initiation of therapy until after the first trimester.[1]
- Combination drug therapy should be initiated even in the first trimester if there are maternal indications.[1]
- Antiretroviral prophylaxis to prevent perinatal HIV transmission should be offered to all pregnant HIV-infected women, regardless of CD4 cell count.[1]
- Therapy associated adverse effects such as hyperglycemia, hepatotoxicity and anemia should be evaluated throughout the pregnancy.[1,2]
- HIV antiretroviral drug resistance testing is recommended prior to the initiation of therapy and if the woman has persistently detectable viremia while on therapy.

Intrapartum and Postpartum Management

- Antiretroviral medications should be given during pregnancy, while in labor, and to the infant after delivery to optimally reduce vertical transmission.

- Intrapartum intravenous zidovudine (ZDV) is recommended for HIV-infected pregnant women, regardless of their antepartum regimen to reduce perinatal HIV transmission.[1]
    - Stavudine (d4T) should be discontinued during labor while receiving ZDV.
    - Combination therapy should be continued during labor even while ZDV is being administered.
    - Oral ZDV will be substituted by intravenous ZDV while in labor, other antiretrovirals should be administered as usual.
- Cesarean delivery is recommended for HIV-infected pregnant women with HIV RNA levels >1,000 copies/mL near the time of delivery.
- In the United States breast-feeding is not recommended in the postpartum period.
- The infant will need antiretroviral prophylaxis to further reduce the risk of vertical transmission.
- In depth discussion of contraception options including barrier methods in addition to the IUD, oral contraceptive pills, or Depo-Provera should be discussed with the patient to reduce unintended pregnancies and the transmission of HIV (drug resistant strains in the case of seroconcordant couples) to their partner.[8,14]
    - Efficacy of oral contraceptive pills may depend of antiretroviral regimen.[14]

Preconceptional Recommendations of CDC Select Panel on Preconception Care Clinical Committee (Coonrod, DV, Jack BW, Stubblefield PG, et al. The clinical content or preconception care: infectious diseases in preconception care in: Preconception Health and Health Care: The clinical Content of Preconception care (Jack B & Atrash, H.K. ed) American J of Obstetrics and Gynecology, 199 (6B) 2008.)

- All men and women should be encouraged to know their HIV status before pregnancy and should be counseled about safe sexual practices. Those women who test positive must be informed of the risks of vertical transmission to the infant and the associated morbidity and mortality rates. These women should be offered contraception. Those women who choose pregnancy should be counseled about the availability of treatment to prevent vertical transmission and that the treatment should begin before pregnancy.

Strength of recommendation: A; quality of evidence: I-b.

References:

1. **CDC**. Public health service task force: 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. http://www.aidsinfo.nih.gov/
2. **Aaron EZ, Criniti SM.** Preconception health care for HIV-infected women. *Top HIV Med*. 2007; 15(4):137-141.
3. **Cooper ER, Charurat M, Mofenson L, et al.** Combination antiretroviral strategies for the treatment of pregnant HIV-1 infected women and the prevention of perinatal HIV-1 transmission. *JAIDS*. 2002;29:484-494.
4. **Alliegro MB, Dorrucci M, Phillips AN, et al.** Incidence and consequences of pregnancy in women with known duration of HIV infection. Italian Seroconversion Study Group. Arch Intern Med. 1997;157:2585-2590.

5. **Hankins C,Tran T, Lapointe N.** Sexual behavior and pregnancy outcomes in HIV-infected women. Canadian Womens HIV Study Group. *J Acquir Immune Defic Synd Hum Retrovirol.* 1998; 18:479-487.
6. **Ogilvie G, Palepu A, Remple VP, et al.** Fertility intentions of women of reproductive age living with HIV in British Columbia, Canada. *AIDS.* 2007;21:s83-s88.
7. **Centers for Disease Control and Prevention.** Recommendation to improve preconception health care-united states. http://www.cdc.gov/mmwR/preview/mmwrhtml/rr5506a1.htm, April 21, 2006.
8. **ACOG Practice Bulletin 73:** Use of hormonal contraception in women with coexistent medical conditions. June 2006.
9. **Cates W, Steiner MJ.** Dual protection against unintended pregnancy and sexually transmitted infections: what is the best approach? *Sex Transm Dis* 2002;29:168-174.
10. **Wilde J.T.** Conception in HIV discordant couples, West Midlands Region Adult Haemohilia Centre, University Hospital Birmingham NHS Trust, UK. *Treatment of Hemophilia* May 2002, #26.
11. **Williams CD, Finnerty JJ, Newberry YG, West RW, Thomas TS, Pinkertonn JV.** Reproduction in couples who are affected by human immunodeficiency virus: medical, ethical, and legal consideration. *Am J Obstet Gynecol.* 2003;189:333-341.
12. **Tuomala RE, Watts DH, Li D, et al.** Improved obstetric outcomes and few maternal toxicities are associated with antiretroviral therapy, including highly active antiretroviral therapy during pregnancy. JAIDS. 2005;38:449-473.
13. **De Santis M, Carducci B, De Santis L, Cavaliere AF, Straface G.** Periconceptional exposure to efavirenz and neural tube defects. *Arch Intern Med.* 2002;162:355.
14. **Liverpool HIV Pharmacology Group, University of Liverpool.** http://www.hiv-druginteractions.org/new/Uploaded_Attachment/57_Hormonal%20Contraceptives.pdf

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