Guidelines for Use of Antiretroviral Drugs in Pregnancy

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- Providing antiretroviral (ARV) drugs during pregnancy, labor, and to the infant is recommended for optimal prevention of HIV transmission.
- ARV therapy or ARV prophylaxis for prevention of perinatal HIV transmission is recommended to all pregnant women with HIV infection regardless of HIV RNA (viral load) or CD4+ count. Highly active ARV combinations are the standard of care.
- Start ARVs as soon as possible in pregnant women who require treatment (Rx), including the first trimester or earlier for pregnant women who require ARVs for prophylaxis. ARVs are more effective when given for a longer duration.
- All 3-drug combinations should include 1 or more NRTIs known to cross the placenta (zidovudine [ZDV], lamivudine [3TC], emtricitabine [FTC], tenofovir [TDF], or abacavir [ABC]). Preferred two-NRTI backbone combinations are 1- ZDV/3TC, 2- ABC/3TC and 3- TDF/FTC or 3TC , unless there is a severe toxicity or documented resistance.
- An HIV-infected woman should make the decision about ARV drugs during pregnancy after talking with her provider about the known and unknown benefits and risks of ARV drugs for her and her infant.

ANTEPARTUM CARE

Initial evaluation

- Degree of immunodeficiency (CD4+ count/%)
- Viral load (VL)
- Accurate history (hx) of ARV use for Rx or prophylaxis
- HIV resistance testing and results of prior resistance testing
- Baseline CBC, renal, liver function tests
- HBV surface antigen, HCV screening (consult guidelines for management if positive)
- Need for OI prophylaxis, including starting or continuing TMP-SMX if CD4+<200 (for current guidelines see www.aidsinfo.nih.gov/guidelines.pdf)
- Evaluation of immunization status
- Counsel on safer sex, smoking cessation, avoidance of alcohol/drugs
- Discuss importance of ARV adherence

Women currently on ARVs

- Continue regimen if VL undetectable (including NVP if stable)
- See recommendations concerning the use of efavirenz
- Avoid use of d4T/ddI combination
- HIV resistance testing if detectable viremia (<500-1000 copies/mL) and consider change to regimen

Women with no hx of ARVs (ARV-naive)

- Start 3-drug combination ARV if woman meets criteria for non-pregnant adult (including in the 1st trimester)
- If woman does not require Rx for own health- start 3-drug combination ARV prophylaxis for prevention of perinatal transmission; as soon as possible or after 1st trimester. However earlier initiation may be more effective
- Preferred combination ARVs include
  - 1- PI regimen (atazanavir/ritonavir [ATV/r] + a preferred two-NRTI Backborne or lopinavir/ritonavir [LPV/r]+ a preferred two-NRTI Backborne
  - 2- NNRTI regimen (efavirenz [EFV] + a preferred two-NNRTI Backborn). May be initiated after 8 weeks of pregnancy. Alternative PIs include darunavir/ritonavir and saquinavir/ritonavir. Alternative NNRTIs include nevirapine. Insufficient data on the use of integrase inhibitors during pregnancy though they can be continued if women currently receiving prior to pregnancy, due to resistance testing or in special scenarios.

Women with no hx of ARV but not currently on ARVs

- Obtain accurate hx of all proper ARVs; obtain HIV resistance testing before starting ARV prophylaxis or Rx to inform ARV choice
- Assess adherence and tolerability issues
- Start combination ARV regimen based on results or resistance testing and hx
- Consult with HIV expert for choice of ARV for women previously treated

Monitoring during pregnancy

- CD4 count at least every 3 months
- VL at 2-4 weeks after starting or changing ARVs, then monthly until undetectable; then every 3 months
- VL and CD4 at 34-36 weeks to inform decision about C-section (C/S)
- Monitor and manage known side effects of ARVs given
- Altering dose may be required for LVP/r and ATV/r
- Consult HIV expert if VL not suppressed after adequate period

Acute HIV Infection in pregnancy

- If suspected, perform HIV 4th generation Antigen-Antibody test and VL simultaneously.
- If positive, start 3-drug combination ARVs immediately, pending results of resistance testing
- To avoid unrecognized acute Infection during pregnancy perform 3rd trimester repeat HIV antibody testing for all women in Florida per 64D-3.042

INTRAPARTUM MANAGEMENT

All HIV + women

- ZDV (IV) recommended regardless of antepartum regimen
- Administer IV ZDV loading dose 2 mg/kg over 1 hour then 1 mg/kg/hour until delivery
- Avoid artificial rupture of membranes or fetal scalp monitoring unless obstetrically indicated
- If delivering vaginally, avoid instruments, forceps or vacuum extraction and/or episiotomy unless obstetrically indicated
- Consult guidelines on management of postpartum hemorrhage when woman is on ARVs during pregnancy
- Avoid Methergine if possible

HIV+ women on ARV Rx

- Continue antepartum ARVs on schedule during labor and prior to scheduled C/S
- If on d4T, stop during labor while IV ZDV is administered
- If fixed dose combination ARV regimen includes ZDV, continue other drug(s) orally while ZDV is given IV
- If on ARV but VL>1000 copies, scheduled C/S recommended before labor and membrane rupture
- If fixed dose combination ARV regimen includes ZDV, continue other drug(s) orally while ZDV is given IV
- If on ARV but VL>1000 copies, schedule C/S recommended before labor and membrane rupture
- Give newborn standard ARV prophylaxis** and continue through 6 weeks

HIV+ women in labor with no prior ARVs

- Begin IV ZDV loading dose and continue ZDV until delivery
- Give newborn combination ARV prophylaxis***and continue through 6 weeks

Women of unknown HIV status who present in labor

- All women with a positive HIV antibody screen should have confirmatory serum testing conducted
- Recommend rapid HIV antibody testing. If reactive, treat as above for HIV+ women in labor with no prior ARVs. Start ZDV without waiting for confirmatory results.
- Give newborn combination ARV prophylaxis*** and through 6 weeks. If mother's confirmatory result is negative, stop infant ARV prophylaxis

Counseling regarding scheduled C/S

- Scheduled C/S recommended (at 38 weeks) for women on ARVs who have VL>1000 near time of delivery (or an unknown VL) near time of delivery
- Scheduled C/S not routinely recommended for women on ARVs with VL<1000
- IV ZDV should begin 3 hours before the scheduled C/S
- Prophylactic narrow spectrum antibiotic at the time of C/S is generally recommended
- Women should be informed of the risks of C/S delivery as well as the potential benefits for the newborn

This information is based on Treatment of HIV-Infected Pregnant Women and Prevention of Perinatal Transmission. Recommendations for Use of Antiretroviral Drugs in Pregnant HIV-1-Infected Women for Maternal Health and Interventions to Reduce Perinatal HIV Transmission in the United States. Available at http://aidsinfo.nih.gov/contentfiles/lvguidelines/PerinatalGL.pdf.

Postpartum Care of HIV+ Women and Neonates

- Breast feeding is not recommended for HIV+ women in the U.S.
- Considerations regarding continuing ARVs after delivery are the same as for non-pregnant adults- degree of immunosuppression, adherence, side effects, partner HIV status and childbearing plans
- Consult with HIV expert about stopping ARVs begun for perinatal prevention
- Discuss additional childbearing intentions; include counseling on reproductive, pre-exposure prophylaxis to discordant partner and contraceptive options
- Reassess support services; the postpartum period poses unique challenges to adherence
- Women who are found to be HIV-infected during pregnancy require comprehensive medical assessment, counseling, and follow-up

NEONATAL CARE

Give newborn ARV prophylaxis and continue through 6 weeks of age

**Standard ARV prophylaxis: ZDV syrup 4mg/kg po twice daily, through 6 weeks as soon as possible and within 6-12 hours of birth. Four week ZDV prophylaxis may be considered when a mother has received standard ARV therapy during pregnancy with consistent viral suppression and no concerns for maternal adherence.

***Combination ARV prophylaxis: ZDV syrup 4mg/kg po STAT twice daily through 6 weeks plus 3 doses of NVP (at birth, 48 hours after first dose, and 96 hours after the second dose). Two-drug infant prophylaxis is recommended for infants born to mother who did not receive antepartum ARVs or received only intrapartum drugs and may be used for infants born to mothers with high or unknown VL

- Consult guidelines for neonate NVP weight-based dosing
- Neonatal ZDV is recommended**
- Consult guidelines for ZDV dosing in premature infants (<35 weeks) and if IV administration is needed
- Liquid ZDV administration should not have absent or late dosing

Clarify mother's HIV status if still unknown

- Recommend rapid HIV testing of infant or mother as soon as possible after birth; if positive, start combination ARV prophylaxis*** for infant STAT
- Send confirmatory HIV test as soon as possible. If confirmatory test is negative, discontinue ARV prophylaxis

Follow-up care for infants born to mothers with HIV infection

- Neonatal ARV prophylaxis regimen should be discussed with mother and taught to mother
- Perform CBC at baseline and then monitored for hematologic abnormalities, consult Guidelines for timing
- HIV DNA PCR or HIV RNA assays are the preferred virologic assays
- HIV virologic testing is recommended at 14-21 days, 1-2 months, and 4-6 months. Some experts also perfom a virologic test at birth, especially in women who have not had good virologic control during pregnancy or if adequate follow up of the infant may not be assured.
- Confirm first positive virologic test with second viral test as soon as possible
- HIV is diagnosed by 2 positive HIV virologic tests on separate blood samples
- HIV infection can be presumptively excluded in a non-breastfed infant with 2 or more negative virologic tests, one obtained at age >14 days and one at >1 month or one negative virologic test at >2 months; or one negative HIV antibody test at > 6 months
- Definitive exclusion of HIV infection is based on 2 or more negative virologic tests performed at > 1 month and > 4 months. (or 2 or more negative HIV antibody tests at > 6months)
- If infant HIV infection is confirmed, refer to pediatric HIV specialist for ongoing treatment and care
- TMP-SMX for PCP prophylaxis should be started at 4-6 weeks of age for all infants exposed to HIV until determined to be uninfected or presumptively uninfected unless there is adequate test information to presumptively exclude HIV infection (negative HIV PCRs at both 14-21 days and 4-6 weeks)
- In the event of an infant with indeterminate or positive HIV PCR testing that is already receiving post-exposure prophylaxis, refer immediately for consultation with a pediatric infectious disease specialist. If an infant is found to be HIV-infected, prophylaxis should be discontinued and treatment for HIV infection initiated with standard cART according to the Pediatric Antiretroviral Guidelines.
- Monitor all infants exposed to ARVs for signs of mitochondrial dysfunction (especially neurological problems)
- Health care providers should routinely inquire about premastication and advise to avoid this practice.

To obtain the most current recommendations, visit
www.aidsinfo.nih.gov

Perinatal HIV Hotline: National Perinatal HIV Consultation and Referral Service offers healthcare providers around-the-clock advice on testing and care of HIV-infected pregnant women and their infants. Provides referrals to HIV specialists and regional resources.

1-888-448-8765 • 24 hours a day • 7 days a week

For information regarding perinatal HIV, please visit our website at:

www.USFCenter.org/Perinatal

and join the Perinatal HIV Prevention Community!

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