

HIV Positive Status

New HIV Diagnosis or Referral

- Standard initial prenatal care labs plus:
 - CBC with differential, electrolytes (including Ca, Mg, PO4)
 - AST, ALT, total bilirubin, albumin, lipase, GGT, G6PD level, HgbA1C
 - PPD (no controls),
 - Hepatitis A and C antibodies, Hep-BSA
 - Toxoplasma IgG for baseline status
 - Herpes simplex virus 1 and 2 IgG antibody
 - CMV IgG antibody for baseline status
 - Send HIV genotype testing under Dr. Kris Patterson's name
 - CD4 count, HIV viral load

First prenatal visit

- Refer to Infectious Disease Service upon High Risk OB referral date
- Notify Dr. Kris Patterson (pager 216-3002) and Dr. Lisa Rahangdale (pager 347-0453). Call ID Clinic (966-7199) for appt with both.
- If previously on antiviral regimen do not change, unless on Efavirenz¹ or D4T or DDI.³ Discuss with Dr. Kris Patterson.
- If not on regimen, medication regimen to be decided by ID personnel
- Refer to social worker, nutrition counselor

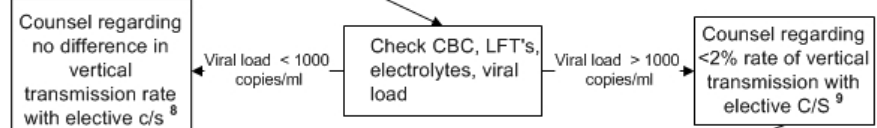
Subsequent visits

- If CD4 < 200, give PCP prophylaxis (Bactrim DS QD)⁵
- If CD4 < 50, add MAI prophylaxis (Azithromycin 1200mg)⁶
- ID will obtain monthly viral load, CBC, chemistry, LFTs, CD4 count q2 months if baseline CD4 is < 300.
- Begin post-partum contraception counseling
- If evidence of AIDS or worsening disease, perform growth scans monthly starting at 28 weeks → start twice weekly testing if evidence of IUGR⁷

Increased LFT's

- Repeat LFT's and lactic acid in 2 days
- If > 2X above baseline, consult ID immediately. Consult pager 216-0626 or Dr. Kris Patterson.

34-36 weeks' gestation



Elects vaginal delivery

Desires elective c/s

Desires elective c/s

- Await spontaneous labor
- If patient lives at distance or history of fast labor, consider induction of labor for controlled delivery
- Upon admission to L & D, give ZDV 2 mg/kg/hr IV load, followed by 1mg/kg/hr drip
- Continue all ART meds as scheduled during labor
- Delay AROM, no FSE, avoid assisted delivery^{10,11}
- Notify Jean Eddeman (216-1333) at delivery

- Admit at 38 weeks
- Load with ZDV 2mg/kg/1hr three hours prior to C/S followed by 1 mg/kg/hr until cord clamp
- Continue all ART meds as scheduled

Declines C/S

- Continue ART regimen
- Contraceptive counseling
- Schedule ID clinic follow-up or confirm previously made follow-up appointment in 2-4 weeks (Postpartum visit with Dr. Rahangdale in ID Clinic. ID visit with Dr. Patterson.)
- Counsel regarding NO breast feeding¹²
- Confirm Pediatric ID follow-up for infant, and counsel mother on administration of AZT to infant

Post-partum

Approved 04/xx/2010
Revised 04/01/2010
Copyright April 2010
UNC School of Medicine

References

- 1) Nightingale, SL. From the Food and Drug Association. **JAMA 1998; 280: 1472.** *Significant central nervous system malformations were observed in offspring of monkeys receiving efavirenz.*
- 2) Chaube S, Murphy ML. The effects of hydroxyurea and related compounds on the rat fetus. **Cancer Res 1966;26:1448-57.** *Administration of hydroxyurea to pregnant rats was associated with embryotoxicity and fetal malformations.*
- 3) Sarner L, Fakoya A. Acute onset lactic acidosis and pancreatitis in the third trimester of pregnancy in HIV-1 positive women taking antiretroviral medication. **Sex Transm Infect 2002;78:58-9.** *Three maternal deaths due to lactic acidosis, ... whose antepartum therapy during pregnancy included d4T and ddI in combination with other antiretroviral agents (either a protease inhibitor or nevirapine).*
- 4) Watts, DH. Management of human immunodeficiency virus infection in pregnancy. **N Engl J Med 2002;346:1879-91.** *For women receiving protease-inhibitor therapy, 50 gm glucose-load testing may be considered early in pregnancy.*
- 5) CDC, Guidelines for prophylaxis against *Pneumocystis carinii* pneumonia for persons infected with human immunodeficiency virus. **MMWR 1989;38 (S- 5):1-9.** *Adults and adolescents who have HIV infection (including pregnant women and those on HAART) should receive chemoprophylaxis against PCP if they have a CD4+ T-lymphocyte count of less than 200/ μ L.*
6. Masur H and the Public Health Service Task Force on prophylaxis and therapy for *Mycobacterium avium* complex. Recommendations on prophylaxis and therapy for disseminated *Mycobacterium avium* complex disease in patients infected with the human immunodeficiency virus. **N Engl J Med 1993;329:898-904.** *Adults and adolescents who have HIV infection should receive chemoprophylaxis against disseminated MAC disease if they have a CD4+ T-lymphocyte count of less than 50 cells/ μ L.*
- 7) Watts DH, Balsubramanian R, Maupin, RT, Delke, I, Dorenbaum, A, Fiore S, Newell ML, Delfraissy JF, et al. for the PACTG 316 Study Team. Maternal toxicity and pregnancy complication in human immunodeficiency virus-infected women receiving antiretroviral therapy: PACTG 316. **Am J Obstet Gynecol 2004; 190: 506-16.** *In asymptomatic HIV-infected women receiving prenatal care and ART, adverse events were uncommon.*
- 8) Mofenson LM, Lambert JS, Stiehm ER, Bethel J, Meyer WA, Whitehouse J et al. Risk factors for perinatal transmission of human immunodeficiency virus type 1 in women treated with zidovudine. Pediatric AIDS Clinical Trials Group Study 185 Team. **N Engl J Med 1999;341:385-393.** *There was no perinatal transmission of HIV-1 among the 84 women who had HIV-1 levels below the limit of detection at base line or the 107 women who had undetectable levels at delivery.*
- 9) The European Mode of Delivery Collaboration. Elective caesarean-section versus vaginal delivery in prevention of vertical HIV-1 transmission: A randomized clinical trial. **Lancet 1999;353:1035-9.** *Three (1.8%) of 170 infants born to women assigned caesarean-section delivery were infected, compared with 21 (10.5%) of 200 born to women assigned vaginal delivery ($p < 0.001$).*
- 10) Minkoff H, Burns DN, Landesman S, et al. The relationship of the duration of ruptured membranes to vertical transmission of human immunodeficiency virus. **Am J Obstet Gynecol 1995;173:585-9.** *Women were significantly more likely to transmit human immunodeficiency virus to their offspring if the duration of rupture of membranes was greater than or equal to 4 hours.*
- 11) Anonymous. Risk factors for mother-to-child transmission of HIV-1. The European collaborative study. **Lancet 1992;339:1007-12.** *The odds-ratio for vertical transmission for breast-fed children was 2.25. Transmission was higher with episiotomy, fetal scalp electrodes, forceps, or vacuum extractors were used.*

12) Read JS; the American Academy of Pediatrics Committee on Pediatric AIDS. Human milk, breastfeeding, and transmission of human immunodeficiency virus type 1 in the United States. **Pediatrics 2003; 112:1196-205.** *Complete avoidance of breastfeeding by HIV-1-infected women remains the only means by which prevention of breastfeeding transmission of HIV-1 can be absolutely ensured.*

Revised April 1, 2010.

Notification to Users

These algorithms are designed to assist the primary care provider in the clinical management of a variety of problems that occur during pregnancy. They should not be interpreted as a standard of care, but instead represent guidelines for management. Variation in practices should take into account such factors as characteristics of the individual patient, health resources, and regional experience with diagnostic and therapeutic modalities.

The algorithms remain the intellectual property of the University of North Carolina at Chapel Hill School of Medicine. They cannot be reproduced in whole or in part without the expressed written permission of the school.