2017 Update: HIV & Pregnancy

2017 Progress in OB/GYN Conference
Jodie Dionne-Odom, MD, 1917 HIV Clinic, Division of Infectious Diseases
Mickey Parks, FNP-BC, Center for Women’s Reproductive Health
University of Alabama at Birmingham
10 February 2017

Disclosures

• Dr. Dionne-Odom receives funding from:
  • NIH/NICHD (1K23HD090993)
  • CDC Division of STD Prevention

• Mickey Parks, FNP-BC, has no financial disclosures.

Outline

• Part 1:
  • Epidemiology (United States and Alabama)
  • Vertical Transmission
  • Treatment Recommendations
  • PReP and Pregnancy

• Part 2:
  • HIV Screening
  • Approach to Care
  • Intrapartum and Post Partum Care
  • Resources
US HIV Epidemiology

Rates of Persons Living with Diagnosed HIV, by County, 2013

Diagnoses of HIV Infection among Adults and Adolescents, by Sex and Transmission Category, 2015—United States and 6 Dependent Areas

CDC.gov
Adults and Adolescents Living with Diagnosed HIV Infection, by Sex and Race/Ethnicity, Year-end 2014—United States and 6 Dependent Areas

Note: Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis.

a Includes Asian/Pacific Islander legacy cases.
b Hispanics/Latinos can be of any race.

Alabama HIV Epidemiology

2014 Alabama HIV Annual Surveillance Report

Table 1. Characteristics of Newly Diagnosed and Prevalent HIV Cases, Alabama 2014

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Newly Diagnosed Cases</th>
<th>Prevalent Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number (%)</td>
<td>Rate</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>552 (28.1)</td>
<td>25.5</td>
</tr>
<tr>
<td>Female</td>
<td>139 (18.9)</td>
<td>5.2</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black, Not Hispanic</td>
<td>481 (79.6)</td>
<td>37.6</td>
</tr>
<tr>
<td>White, Not Hispanic</td>
<td>140 (25.5)</td>
<td>5.6</td>
</tr>
<tr>
<td>Hispanic</td>
<td>18 (3.2)</td>
<td>36.4</td>
</tr>
<tr>
<td>Hispanic/Other Unknown</td>
<td>20 (3.9)</td>
<td>10.0</td>
</tr>
<tr>
<td>Age Group (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;13</td>
<td>202 (10.5)</td>
<td>0.0</td>
</tr>
<tr>
<td>13-19</td>
<td>664 (5.1)</td>
<td>3.0</td>
</tr>
<tr>
<td>20-29</td>
<td>1679 (15.6)</td>
<td>17.9</td>
</tr>
<tr>
<td>30-39</td>
<td>130 (21.2)</td>
<td>35.5</td>
</tr>
<tr>
<td>40-49</td>
<td>92 (15.3)</td>
<td>19.0</td>
</tr>
<tr>
<td>≤50</td>
<td>92 (5.3)</td>
<td>5.4</td>
</tr>
</tbody>
</table>

Natural History of HIV

Vertical transmission of HIV

• 1) Transplacental
• 2) Labor and Delivery
• 3) Breast Feeding

• Maternal Viral Load is always a key predictor of transmission

HIV in Pregnancy

Antenatal Treatment & MTCT

Cooper JAIDS 2002;29
Duration, timing & complexity of ART regimens impact effectiveness to reduce MTCT

Maternal ART prophylaxis

- sd-NVP
- sc AZT + sd-NVP
- Daily Infant NVP

Maternal therapeutic ART

Courtesy of Lynne Mofenson, NICHD

No Perinatal HIV-1 Transmission From Women With Effective Antiretroviral Therapy Starting Before Conception

- 8075 mother-infant pairs
- Followed prospectively in France 2000-2011.
- Cohort analyzed according to maternal viral load at delivery and timing of ART initiation.
- 56/8075 vertical transmissions (0.7%).
- None among 2651 women with VL <50 before conception

Retention in HIV Medical Care and Viral Suppression among Persons Aged ≥13 Years Living with Diagnosed HIV Infection, by Sex, 2013—32 States and the District of Columbia

Note. Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. Retained in medical care was defined as ≥2 tests (CD4 or VL) ≥3 months apart in 2013. Viral suppression was defined as <200 copies/mL on the most recent VL test in 2013.
Case #1

- 24 year old G2P1 is 16.3 weeks pregnant and presenting for routine follow up care (visit #2).
- Her intake medical labs are notable for newly diagnosed HIV infection (4th generation screen, confirmatory test positive).
  - CD4 is 455 cells/mm3, CD4 % is 38
  - HIV Viral Load is 95,000 copies/mL
  - Remainder of labs and STI screen are unremarkable
- She feels well and has no complaints. M partner is being tested.

- What additional labwork do you need to order today?
- Does she need to start antiretroviral therapy? PCP prophylaxis?
  - Urgently?
  - Which medications do you want to begin?

Antiretroviral Drugs by Class

<table>
<thead>
<tr>
<th>NRTI</th>
<th>PI</th>
<th>Fusion Inhibitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abacavir (ABC)</td>
<td>Atazanavir (ATV)</td>
<td>Enfuvirtide (ENF, T-20)</td>
</tr>
<tr>
<td>Didanosine (ddI)</td>
<td>Darunavir (DRV)</td>
<td></td>
</tr>
<tr>
<td>Emtricitabine (FTC)</td>
<td>Fosamprenavir (FPV)</td>
<td></td>
</tr>
<tr>
<td>Lamivudine (3TC)</td>
<td>Indinavir (IDV)</td>
<td></td>
</tr>
<tr>
<td>Stavudine (d4T)</td>
<td>洛匹那韦 (LPV)</td>
<td></td>
</tr>
<tr>
<td>Tenofovir DF (TDF)</td>
<td>Nelfinavir (NFV)</td>
<td></td>
</tr>
<tr>
<td>Zidovudine (AZT, ZDV)</td>
<td>Saquinavir (SQV)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tipranavir (TPV)</td>
<td></td>
</tr>
<tr>
<td>NNRTI</td>
<td>Pharmacokinetic Enhancers</td>
<td></td>
</tr>
<tr>
<td>Efavirenz (EFV)</td>
<td>Ritonavir (RTV, r)</td>
<td>Ritonavir (RTV, /r)</td>
</tr>
<tr>
<td>Etravirine (ETR)</td>
<td>Cobicistat (COBI)</td>
<td>Cobicistat (COBI)</td>
</tr>
<tr>
<td>Nevirapine (NVP)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rilpivirine (RPV)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delavirdine (DLV)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

General Principles of Drug Selection

- Guidelines for use of ART for maternal health during pregnancy generally are the same as for women who are not pregnant
  - Some modifications based on concerns about specific ARVs during pregnancy
- Consider benefits vs risks of ARV drug use during pregnancy
- Ensure that at least 1 NRTI with high placental transfer is included in cART regimen for sufficient infant preexposure prophylaxis
- Counsel women on the importance of close adherence to ARV regimen
  - Offer support services, mental health services, smoking cessation, and drug abuse treatment plans as indicated
- Coordinate care between OB/GYN, ID/HIV and Pediatric specialists.
### Initial ART for ARV-Naive Pregnant Women

#### Preferred 2-NRTI Backbone Regimens

<table>
<thead>
<tr>
<th>Regimen</th>
<th>Comments</th>
</tr>
</thead>
</table>
| ABC/3TC          | • Potential HSR: ABC should not be used in patients who test positive for HLA-B*5701  
                  | • Available as FDC, can be given once daily                              |
| TDF/FTC or TDF + 3TC | • Can be administered once daily  
                       | • TDF has potential renal toxicity, use with caution in patients with renal insufficiency |
| ZDV/3TC          | • Most experience for use during pregnancy  
                  | • Twice-daily administration  
                  | • Higher risk of hematologic toxicity                                   |

#### Preferred PI Regimens

<table>
<thead>
<tr>
<th>Regimen</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATV/r + preferred 2-NRTI backbone</td>
<td>• Once daily</td>
</tr>
</tbody>
</table>
| LPV/r + preferred 2-NRTI backbone   | • Twice-daily administration.  
                       | • Once-daily LPV/r not recommended during pregnancy                       |

---

**What if there were a pill that could help prevent HIV?**

**There is.**

**Ask your doctor if PrEP is right for you.**

Pre-exposure prophylaxis: A daily pill to reduce risk of HIV infection

[www.cdc.gov/hiv/treatment/prep.html](http://www.cdc.gov/hiv/treatment/prep.html)
Summary for Part I

- HIV infection rates are high in the southeastern US.
- More than 3500 women in Alabama have HIV.
- Vertical HIV transmission can be prevented with early diagnosis and treatment in women.
- More work is needed to improve retention in care, particularly postpartum.
- One recommended ART regimen during pregnancy is atazanavir/ritonavir and tenofovir/emtricitabine.
- Women at risk of acquiring HIV during pregnancy are expected to benefit from PReP with tdf/ftc. Studies are ongoing.
- Care coordination between OB/GYN, ID/HIV and Pediatrics is necessary.
HIV Screening

1. Opt-out HIV test as early as possible during routine prenatal care
2. Repeat HIV in 3rd trimester (ideally before 36 weeks) for women “at risk” or in high HIV prevalence/incidence area
3. Opt out rapid screen at delivery if not tested previously (or not documented)

Testing and Diagnosis

- 15% of adults with HIV in the US are unaware of their infection
- In past - 3rd generation HIV testing
  - Tests for antibodies (IgM/IgG)
  - 3-4 week window period
- Currently – 4th generation HIV-1/2 Testing
  - Tests for antibodies and HIV P24 antigen.
  - 2 week window period.
  - Sensitivity and specificity approach 100%
- Molecular virologic testing - HIV RNA PCR
  - Not recommended for screening
  - Useful if acute HIV infection is suspected
Testing and Diagnosis

- All currently available tests look for HIV-1 and HIV-2 Ab.
- False positive screening tests can occur with autoantibodies of pregnancy.
- Reactive 3rd/4th generation test without confirmation is a "reactive test", but not a "positive test".
- Confirmatory testing via a different method is needed.
  - Many labs have reflex confirmatory testing.
  - ie - HIV differentiation assay
- Western blot is no longer recommended for confirmatory testing (longer window period for detection).
- Once HIV infection has been confirmed, follow up testing includes HIV viral load, CD4 and CBC with differential.
- If HIV diagnosis is confirmed, discuss results in person instead of over the phone.

Approach to Care

Care Basics

- New diagnosis: discuss disease and treatment, risk of transmission to the baby, partner status, support system. Initiate medication treatment, and link with an HIV care provider.
- Existing diagnosis: determine disease history, current meds (may need to initiate or change meds), HIV care provider. Discuss risk of transmission to baby, partner status, support system.
- Complete initial prenatal exam, ultrasound and labs. Also obtain: HIV viral load; CD4; CBC with diff; Basic metabolic profile; Hepatic Function Profile.
- Start conversation about birth control, safe sex with condoms and need to bottle feed.
Intrapartum and Postpartum Care

Prenatal Care in HIV

- Monitor for medication compliance: confirm meds and doses.
- Monitor for medication side effects: nausea/vomiting and diarrhea tend to be the most common. Treat proactively.
- Monitor for candidiasis: for severe/recurrent guidelines suggest Diflucan 150 mg.

Prenatal Care – Labs and Meds

- HIV viral load and CD4 every trimester or sooner if compliance an issue.
  - Viral load: “Target not detected” is undetectable.
  - If VL trending up, assess adherence and consider resistance
- Obtain BMP and Hepatic Function Panel
- Prophylaxis
  - CD4<200: add Bactrim DS 1 daily for PCP prophylaxis
  - CD4<50: continue Bactrim and add azithromycin 1200 mg/wk for MAC
- Standard STI screening at first visit and repeat in 3rd trimester.
Intrapartum Care

- Delivery:
  - May deliver vaginally at term if HIV viral load is <1,000
  - Cesarean at 38 weeks if HIV viral load >1,000
  - With either mode, AZT IV for 3 hours prior until the cord is clamped.
    - Dose based on admission weight: 2 mg/kg bolus, then 1 mg/kg/hr
  - Bottle feeding is strongly encouraged.

Postpartum Care

- Continue ART medications.
- AZT BID for HIV-exposed infant x 6 weeks.
- Schedule follow up visit with HIV provider for mother and with pediatrician aware of HIV-exposure for baby.
- Postpartum Birth Control:
  - BTL if eligible and consented
  - Long Acting Reversible Contraceptives (LARCS)
  - Injections
  - Oral Contraceptives
  - Other hormonal contraceptives: patch, ring
  - Condoms: always recommended for STI prevention

Summary Part 2

- Ensure testing accuracy
- Provide diagnosis in person
- Confidentiality very important
- Determine med regimen
- Determine HIV care provider
- Determine support system
- Monitor labs
- Delivery plans
- Bottlefeeding
- Postpartum birth control
- HIV follow up
Resources

• National Perinatal HIV Consultation Service (UCSF):
  1-888-448-8765
• Alabama Department of Public Health HIV/AIDS Hotline:
  1-800-592-2437
• AIDS Alabama Confidential State Helpline: 1-800-592-2437
• National Institutes of Health:
  AIDS INFO. http://aidsinfo.nih.gov
  a. HIV Pregnancy Treatment Guidelines
  b. Pediatric HIV Treatment Guidelines
  c. Adult HIV Treatment Guidelines

Resources (cont)

• Centers for Disease Control (CDC)
  a. www.cdc.gov/hiv/
• American Congress of Obstetricians and Gynecologists (ACOG)
  a. http://www.acog.org/AboutACOG/ACOG-Departments/HIV
• Alabama Department of Public Health
  a. www.adph.org
  b. www.adph.org/aids
• Alabama Perinatal Excellence Collaborative (APEC)
  www.apecguidelines.org

Thank You

Questions?