CMEO
BriefCase

Antiretroviral Treatment for People With HIV Who Are Pregnant

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CME OUTFITTERS

Rana Chakraborty, MD, MSc, FAAP, FRCPCH, DPhil (Oxon), FPIDS, FIDSA

Professor and Consultant

Department of Pediatrics and Adolescent Medicine, Department of Immunology, and Department of Obstetrics and Gynecology

Mayo Clinic College of Medicine and Science

Rochester, MN

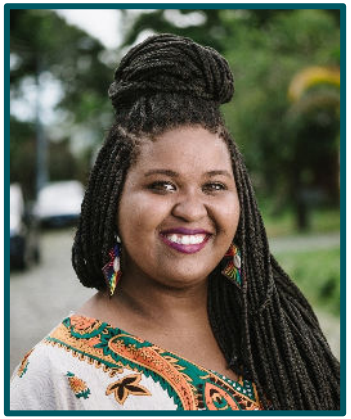
Judy Levison, MD, MPH

Professor
Department of Obstetrics and Gynecology
Baylor College of Medicine
Houston, TX

Learning Objective

Integrate guideline recommended HIV treatment into perinatal care.

Patient Case: Zauna



32-year-old female presents to obstetrician at 6 weeks gestation:

- Zauna and her husband both have HIV and are virally suppressed with the use of antiretroviral therapy (ART).
- The couple is elated with the pregnancy after trying to conceive for over a year. They want to do everything possible to have a healthy pregnancy and prevent vertical transmission of HIV.

Medications	Initial Labs	History
BIC/FTC/TAF po 1x daily **Prenatal vitamin** po 1x daily **OTC antacid** po prn heartburn	**HIV RNA:** < LLOD **CD4 count:** 513 cells/mm^3 **STI panel:** all negative **CBC + diff:** all WNL **Renal + hepatic function:** all WNL **eGFR:** 84mL/min/1.73m^2	• Diagnosed with HIV 10 years prior and virally suppressed for 5 years, not disclosed to extended family • Occasional acid reflux • No history or concern for tobacco or substance use

BIC = bictegravir; CBC = complete blood count; CD4 = clusters of differentiation 4; eGFR = estimated glomerular filtration rate; FTC = emtricitabine; LLOD = lower limit of detection; OTC = over the counter; po = by mouth; prn = as needed; STI = sexually transmitted infection; TAF = tenofovir alafenamide; WNL = within normal limits

Audience Response

What is the risk of *in utero* HIV transmission when ART is used to maintain an undetectable viral load throughout the pregnancy?

A. Over 50%
B. Approximately 30%
C. Approximately 10%
D. Less than 1%
E. I don’t know

Audience Response

What is the risk of *in utero* HIV transmission when ART is used to maintain an undetectable viral load (VL) throughout the pregnancy?

A. Over 50%
B. Approximately 30%
C. Approximately 10%
D. Less than 1%
E. I don't know

Sibiude J, et al. *Clin Infect Dis*. 2023;76(3):e590-e598.

French Perinatal Cohort Study

N = 14,630 women with HIV who delivered from 2000 to 2017 at nationwide centers in the French Perinatal Cohort		
VL Suppressed on ART at Conception?	**VL Suppressed Near Delivery?**	**Incidence of Perinatal HIV Transmission**
YES	YES	**0%** (0/5482)
NO	YES	**0.57%** (26/4596)
YES	NO	**1.08%** (9/834)

Conclusion: Suppressive ART initiated before pregnancy and continued throughout pregnancy can reduce perinatal transmission of HIV to almost zero.

VL = viral load

Sibiude J, et al. *Clin Infect Dis*. 2023;76(3):e590-e598.

HIV-Related Laboratory Monitoring for Pregnant People With HIV
Not Including ART-Specific Monitoring

Laboratory Test	Entry Into Antenatal Care	At Least Every 3 Months During Pregnancy (after viral suppression)	24 to 28 Weeks Gestation	~ 36 Weeks Gestation (< 4 weeks of delivery)
HIV RNA Level (VL)	✓ Including review of past levels	✓ More frequent monitoring may be indicated		✓ To inform mode of delivery and infant ARV regimen
CD4 Count	✓ Including review of past counts and HIV-related illnesses	✓ If on ART < 2 years, CD4 count < 300 cells/mm^3, inconsistent adherence, and/or detectable VL		
Standard BG Screening			✓ Earlier if risk for glucose intolerance	
CBC + Renal Function	✓		✓	
Liver Function	✓	✓ With additional testing as clinically indicated		

BG = blood glucose

Panel on Treatment of HIV During Pregnancy and Prevention of Perinatal Transmission. Clinical Info HIV.gov Website. 2023. https://clinicalinfo.hiv.gov/sites/default/files/guidelines/documents/perinatal-hiv/guidelines-perinatal.pdf.

ARV Use in Pregnant People with HIV

ART-Naïve Recommendations

Preferred	Alternative	Insufficient Data*	Not Recommended*
Abacavir (ABC) Lamivudine (3TC) Emtricitabine (FTC) Tenofovir (TDF or TAF) Dolutegravir (DTG) Darunavir (DRV) boosted with ritonavir (RTV, r)	Zidovudine (ZDV, AZT) Raltegravir (RAL) Atazanavir (ATV)/r Efavirenz (EFV) Rilpivirine (RPV) oral	Bictegravir (BIC) Doravirine (DOR)	Cabotegravir (CAB) oral CAB/RPV long-acting Elvitegravir (EVG)/r Lopinavir (LPV)/r Etravirine (ETR) Nevirapine (NVP) Cobicistat (COBI)

NRTI INSTI PI NNRTI Booster

If taking any of the following medications when pregnancy occurs, switch to a recommended regimen: stavudine (d4T), didanosine (ddI), fosamprenavir (FPV), indinavir (IDV), nelfinavir (NFV), saquinavir (SQV), tipranavir (TPV), or a 3-NRTI ARV regimen (e.g., ABC/ZDV/3TC).

*In most cases, people with HIV who are receiving ART and present for pregnancy care should continue their ART during pregnancy, provided \the regimen is tolerated, safe, and effective in suppressing viral replication. Consider more frequent VL monitoring (every 1-2 months).

INSTI = integrase strand transfer inhibitor; NNRTI = non-nucleotide reverse transcriptase inhibitor; NRTI = nucleo(s/t)ide reverse transcriptase inhibitor; PI = protease inhibitor

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Additional Monitoring for Pregnant People with HIV Who Are Unsuppressed, Initiating/Modifying ART, and/or Using Nonpreferred ARVs

Laboratory Test	Timepoint or Frequency of Testing
HIV RNA Level	At ART initiation/modification, 2 to 4 weeks after ART initiation/modification, monthly until VL is undetectable, then at least every 3 months during pregnancy after viral suppression – every 1 to 2 months if taking ARVs shown to have reduced levels in 2nd and 3rd trimester (e.g., COBI, EVG, RPV)
CD4 Count	At initial antenatal visit, then every 3 months during pregnancy
HIV Drug Resistance	At ART initiation/modification Do not wait for results to initiate ART!
HLA-B*5701	If ABC use is anticipated
ARV-Specific Toxicity	Refer to recommendations in package inserts for individual ARV drugs.

Expert consultation can be obtained from the Perinatal HIV/AIDS Hotline (888-448-8765).

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Intrapartum and Postpartum HIV Care

Birth Parent

If HIV RNA > 1,000 c/mL:

- Schedule cesarean at 38 weeks.
- Begin intravenous (IV) ZDV when patients present in labor or at least 3 hours prior to scheduled cesarean.

If HIV RNA ≤ 1,000 c/mL on ART:

- Cesarean delivery solely for prevention of perinatal HIV transmission is NOT recommended.
- Consider IV ZDV if HIV RNA ≥ 50 c/mL.

Continue ART throughout and after delivery; Arrange for supportive services prior to discharge.

Newborn

Begin ARV regimen within 6 hours of delivery and test for HIV at 2 to 3 weeks, 1 to 2 months, and 4 to 6 months of life.

- **Low risk**: oral ZDV x 2 weeks
- **Moderate risk:** ZDV x 4-6 weeks
- **High risk**: presumptive HIV therapy with 3-drug ARV regimen (NVP or RAL)/3TC/ZDV x 6 weeks
- **Confirmed HIV:** HIV therapy with 3-drug ARV regimen indefinitely

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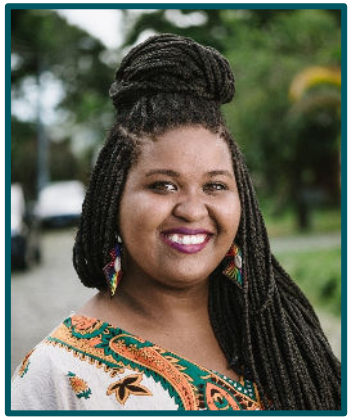
Patient Case, Continued: Zauna



32-year-old female presents to obstetrician in her third-trimester:

- Zauna has maintained an undetectable viral load throughout her pregnancy. She and the baby appear to be healthy and developing well.
- Zauna reveals that she and her husband are first-generation immigrants, and their families in Nigeria are very excited about the baby – especially her mother-in-law (MIL) who is planning to visit shortly after the birth.
- Zauna wants to breastfeed. She does not wish to reveal her HIV+ status to her MIL for fear of judgement and stigma, but she is concerned that being seen formula feeding will raise suspicion and cause conflict in the family.

I want to breastfeed. Can you help me?

Audience Response

With consistent maternal ART adherence and an undetectable viral load, what is the risk of vertical HIV transmission to a breastfed baby?

A. Over 50%
B. Approximately 30%
C. Approximately 10%
D. Less than 1%
E. I don’t know

Audience Response

With consistent maternal ART adherence and an undetectable viral load, what is the risk of vertical HIV transmission to a breastfed baby?

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Flynn PM, et al. *J Acquir Immune Defic Syndr*. 2018;77(4):383-392.
Flynn PM, et al. *J Acquir Immune Defic Syndr.* 2021;88(2):206-213.

HIV Guideline Update: Infant Feeding

- **People with HIV should receive evidence-based, patient-centered counseling to support shared decision-making about infant feeding throughout pregnancy and again after delivery.**
  - The infant feeding options that eliminate the risk of HIV transmission are formula and pasteurized donor human milk.
  - Maintaining viral suppression through ART during pregnancy and postpartum decreases breastfeeding transmission risk to less than 1%, but not zero.
  - An exclusive focus on the risk of perinatal HIV transmission via breastfeeding fails to acknowledge the health benefits to lactating parents and their infants that may be lost by prohibiting breastfeeding.
- **People with HIV on ART with a sustained undetectable viral load and who choose to breastfeed should be supported in this decision.**
  - Engaging Child Protective Services or similar agencies is not an appropriate response to the infant feeding choices of an individual with HIV.

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SMART Goals

Specific, Measurable, Attainable, Relevant, Timely

- Utilize the updated DHHS Perinatal HIV Guidelines to implement recommendations for optimal management of pregnant persons with HIV to prevent perinatal transmission throughout the antenatal, intrapartum, and postpartum periods.
- Provide all pregnant persons with HIV with ongoing patient education on the importance of achieving and maintaining a suppressed viral load through ART throughout and following pregnancy.
- Proactively initiate shared decision-making on infant feeding options with pregnant persons with HIV to help create an informed and supported infant feeding plan.

CMEO BriefCase 1

HIV & Substance Use Disorder: Addressing Barriers to Viral Suppression

CMEO BriefCase 2

Team Approach to Addressing Comorbidities in Aging Populations of People With HIV

CMEO BriefCase 3

Switching ART Due to Treatment Resistance

www.CMEOutfitters.com/infectious-disease-hub/

Infectious Disease Hub

A robust hub of education and resources to learn more about HIV

https://www.cmeoutfitters.com/infectious-disease-hub/

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