How To Treat HIV:
Collaborative Case Discussions

Cody A. Chastain, MD, FACP, FIDSA
Associate Professor of Medicine
Division of Infectious Diseases
Vanderbilt University Medical Center

AETC AIDS Education & Training Center Program Southeast

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Goal

- Empower you to enhance your knowledge and skills for **HIV treatment** in your practice

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Objectives

By the end of this session, you will be able to:

- Select initial antiretroviral therapy (ART) for treatment naïve individuals and for persons of childbearing potential
- Implement rapid ART initiation in appropriate settings
- Distinguish when to initiate ART in the setting of opportunistic infections (OIs)
- Contrast management for different patterns of nonadherence

Format

- Case
- Discussion
- Debrief
- Directed Teaching
- Pearl
- Questions and Answers

… and REPEAT!

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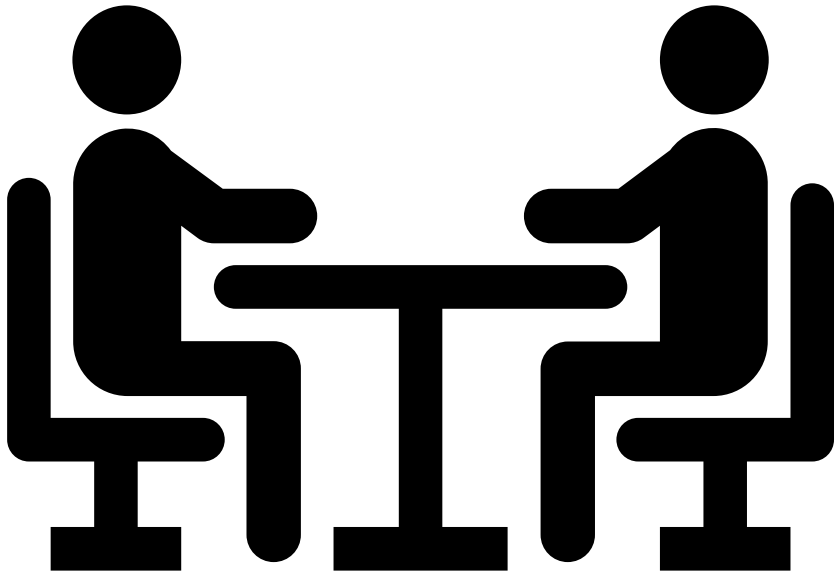
Case #1

- Frank is a 35-year-old cisgender man who presents as a new patient for evaluation of recently diagnosed HIV infection.
- He recently underwent sexually transmitted infection testing at the local health department, where a 4th generation HIV antigen/antibody combination assay was performed; all test components returned positive, including confirmatory antibody testing.
- Frank has a history of depression and anxiety, and he feels symptoms related to these conditions have been exacerbated by the stress of his recent diagnosis. He takes sertraline 100 mg by mouth daily, and he has consistently adhered to this treatment.
- He has employment-based insurance, and he has family and friend support.
- **What would be the next best step?**

Discussion

- Review the case
- Think about your practice setting
- Discuss with your colleagues



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Case #1: Discussion

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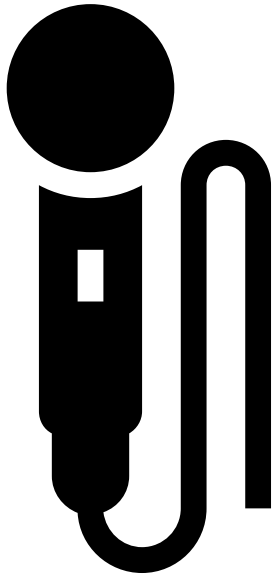
Debrief

- Share part of your group's discussion
- Share your questions and/or concerns



Panel's Recommendations for Initiating Antiretroviral Therapy in Treatment-Naive Patients

Panel's Recommendations
• Antiretroviral therapy (ART) is recommended for all persons with HIV to reduce morbidity and mortality **(AI)** and to prevent the transmission of HIV to others **(AI)**. • The Panel on Antiretroviral Guidelines for Adults and Adolescents recommends initiating ART immediately (or as soon as possible) after HIV diagnosis in order to increase the uptake of ART and linkage to care, decrease the time to viral suppression for individual patients, and improve the rate of virologic suppression among persons with HIV **(AII)**. • When initiating ART, it is important to educate patients regarding the benefits of ART and to deploy strategies to optimize care engagement and treatment adherence **(AIII)**.

Rating of Recommendations: *A = Strong; B = Moderate; C = Weak*

Rating of Evidence: *I = Data from randomized controlled trials; II = Data from well-designed nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion*

Rapid ART Initiation

- ART started as soon as possible following new HIV diagnosis
- Facilitates and improves engagement in care, leads to earlier HIV suppression, reduces time of potential transmissibility
- Treatment regimens used:
  - Bictegravir/emtricitabine/tenofovir alafenamide (BIC/FTC/TAF)
  - Dolutegravir (DTG) + tenofovir (TDF or TAF) + NRTI (FTC or 3TC)
  - Darunavir/cobicistat/tenofovir alafenamide/emtricitabine
- Intake and additional labs may be obtained on same date

Rapid (Immediate) ART Initiation & Restart: Guide for Clinicians

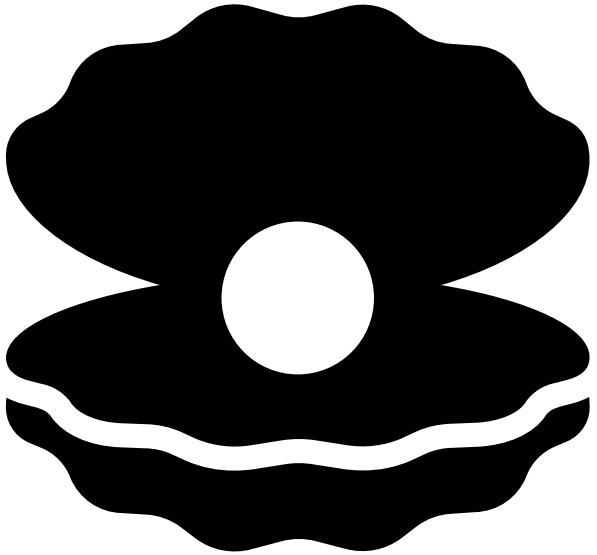
Publish date: *January 23, 2023*

AETC Source: AETC National Coordinating Resource Center

Immediate antiretroviral therapy (ART) means starting HIV treatment as soon as possible after the diagnosis of HIV infection, preferably on the first clinic visit (and even on the same day as the HIV diagnosis). This strategy also is known as “rapid ART,” “same-day ART,” and “treatment upon diagnosis.”

Case #1: Pearl

- Rapid ART initiation can help improve engagement in care, lead to earlier HIV viral suppression, and reduce the length of time for potential HIV transmission to others.

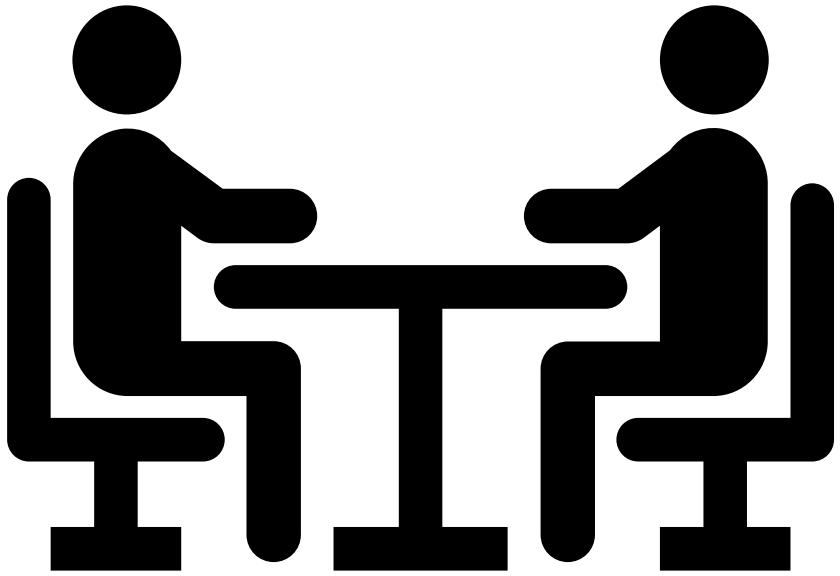


Case #2

- Sam is a 60-year-old cisgender man who presents to establish care in your clinic after recent hospitalization for newly diagnosed HIV and associated *Pneumocystis jirovecii* pneumonia.
- He was admitted to the hospital two weeks ago for cough and shortness of breath. He was diagnosed with *Pneumocystis* pneumonia and was subsequently diagnosed with HIV. He was in the hospital for three days and did not require intensive care or supplemental oxygen support. He has been treated with trimethoprim/sulfamethoxazole by mouth. He is clinically improving and is two weeks into his three-week course of treatment.
- No other opportunistic infections were identified during the hospitalization.
- His baseline CD4+ T-lymphocyte count of 155 cells/µL (10%). His HIV-1 RNA polymerase chain reaction (PCR) value was 1,050,573 copies/mL. His baseline HIV-1 genotype did not reveal any significant drug resistance mutations (i.e., “wild type”).
- **What is the best recommendation the timing of ART?**

Discussion

- Review the case
- Think about your practice setting
- Discuss with your colleagues



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Case #2: Discussion

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Debrief

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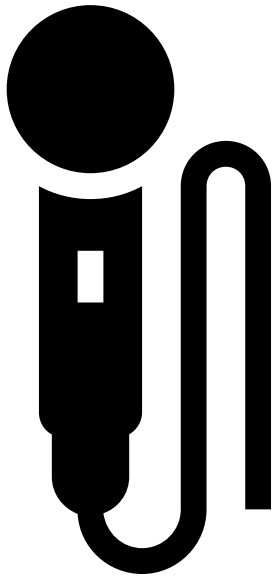


Case #2: ART Initiation After Opportunistic Infection

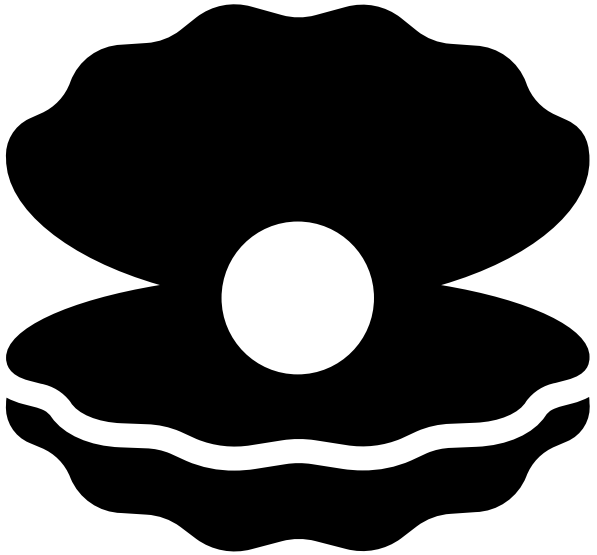
- Opportunistic infections (OIs) and the risk of immune reconstitution inflammatory syndrome (IRIS) may alter the timing of ART initiation

- For most OIs, starting ART within 2 weeks of diagnosis and appropriate treatment is recommended
  - Zolopa A, Andersen J, Powderly W, et al. “Early antiretroviral therapy reduces AIDS progression/death in individuals with acute opportunistic infections: a multicenter randomized strategy trial.” PLoS One. 2009;4(5):e5575.

- Cryptococcus and tuberculosis infections may warrant delay in ART to optimize outcomes

Case #2: Pearl

- For most opportunistic infections (OIs), including Pneumocystis pneumonia, starting antiretroviral therapy (ART) within 2 weeks of OI diagnosis and initial treatment is recommended.
- Cryptococcus and tuberculosis may warrant delay in ART to optimize clinical outcomes.

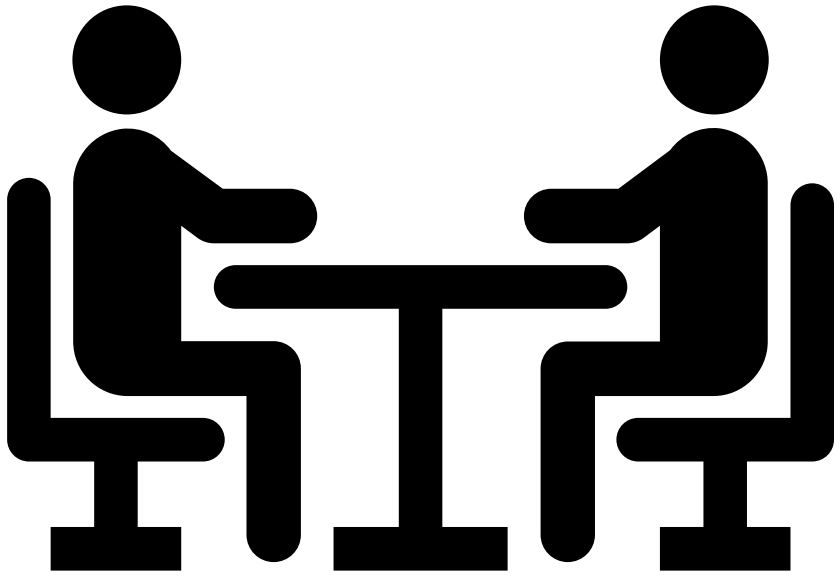


Case #3

- Alfred is a 23-year-old cisgender man who was recently diagnosed with HIV as part of a routine yearly physical.
- He is open to starting HIV therapy, but he feels well and is uncertain if he needs to be on medication.
- He states that he will start therapy if it is indicated.
- His CD4+ T-lymphocyte count is 885 cell/µL and his HIV RNA polymerase chain reaction (PCR) level is 43,267 copies/mL.
- **What would you recommend for initial antiretroviral therapy?**

Discussion

- Review the case
- Think about your practice setting
- Discuss with your colleagues



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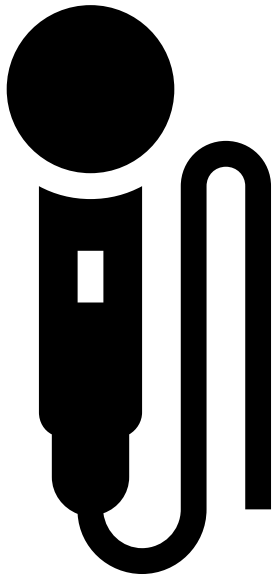

Available ARV Classes and Medications

NRTI

Abacavir (ABC)
Didanosine (ddI)
Emtricitabine (FTC)
Lamivudine (3TC)
Stavudine (d4T)
Tenofovir DF (TDF)
Tenofovir alafenamide (TAF)
Zidovudine (AZT, ZDV)

NNRTI

Delavirdine (DLV)
Doravirine (DOR)
Efavirenz (EFV)
Etravirine (ETR)
Nevirapine (NVP)
Rilpivirine (RPV)

Integrase Inhibitor (INSTI)

Bictegravir (BIC)
Cabotegravr (CAB)
Dolutegravir (DTG)
Elvitegravir (EVG)
Raltegravir (RAL)

PI

Atazanavir (ATV)
Darunavir (DRV)
Fosamprenavir (FPV)
Indinavir (IDV)
Lopinavir (LPV)
Nelfinavir (NFV)
Saquinavir (SQV)
Tipranavir (TPV)

Pharmacokinetic (PK) Booster

Ritonavir (RTV, /r)
Cobicistat (COBI, /c)

Fusion Inhibitor

Enfuvirtide (ENF, T-20)

CCR5 Antagonist

Maraviroc (MVC)

Entry Inhibitor

Fostemsavir (FOS)
Ibalizumab (IBA)

Capsid Inhibitor

Lenacapavir (LEN)

Commonly-used ARV Medications

NRTI

Abacavir (ABC)

Didanosine (ddI)

Emtricitabine (FTC)

Lamivudine (3TC)

Stavudine (d4T)

Tenofovir DF (TDF)

Tenofovir alafenamide (TAF)

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NNRTI

Delavirdine (DLV)

Doravirine (DOR)

Efavirenz (EFV)

Etravirine (ETR)

Nevirapine (NVP)

Rilpivirine (RPV)

Integrase Inhibitor (INSTI)

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Selecting Initial ART Regimen: Factors to Consider

Patient Characteristics

- HIV RNA; CD4 count
- HIV resistance test results
- HLA-B*5701 status
- Patient preferences
- Anticipated adherence

Comorbidities or Other Conditions

- Cardiovascular disease, hyperlipidemia, renal disease, liver disease, osteoporosis, psychiatric illness, others
- Pregnancy or pregnancy potential
- Coinfections: HCV, HBV, TB

Regimen Characteristics

- Genetic barrier to resistance
- Potential adverse effects
- Drug interactions with other medications
- Convenience (pill #, dosing frequency, fixed-dose combinations, food requirements)
- Cost, access

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Initial Treatment: Recommended Regimens

- 2 classifications:
  - **Recommended initial regimens for most people with HIV**
    - Demonstrated durable virologic efficacy, favorable tolerability and toxicity profiles, easy to use
  - **Recommended initial regimens in certain clinical situations**
    - May be preferable for some patients
- Many other regimens may be effective but have disadvantages compared with recommended regimens (e.g., more toxicity, more pills, less clinical trial data)

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Rating Scheme for Recommendations

Strength of recommendation:

- A: Strong
- B: Moderate
- C: Optional

Quality of evidence:

- I: ≥1 randomized controlled trials
- II: ≥1 well-designed nonrandomized trials or observational cohort studies with long-term clinical outcomes; also randomized switch studies and bioavailability/bioequivalence studies
- III: Expert opinion

Recommended initial regimens for most people with HIV if no history of PrEP with long-acting cabotegravir

- **INSTI + 2 NRTIs**
  - BIC/TAF/FTC (AI)
  - DTG/ABC/3TC (AI); only if HLA-B*5701 negative, no HBV
  - DTG + (TAF or TDF) + (FTC or 3TC) (AI)
- **INSTI + 1 NRTI**
  - DTG/3TC (AI); not if HIV RNA >500,000 copies/mL, HBV coinfection, or ART is started before HIV resistance test or HBV test results are available

Notes:

- 3TC can be used in place of FTC and vice versa.
- TAF: fewer bone and kidney toxicities; TDF: lower lipids.

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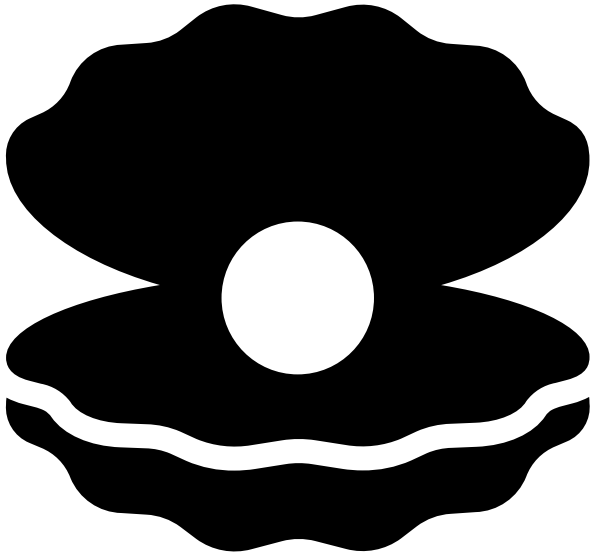
Case #3: Pearl

- HIV treatment, typically consisting of three fully active antiretrovirals from at least two therapeutic classes, is recommended for all newly diagnosed people with HIV regardless of CD4+ T-lymphocyte count.

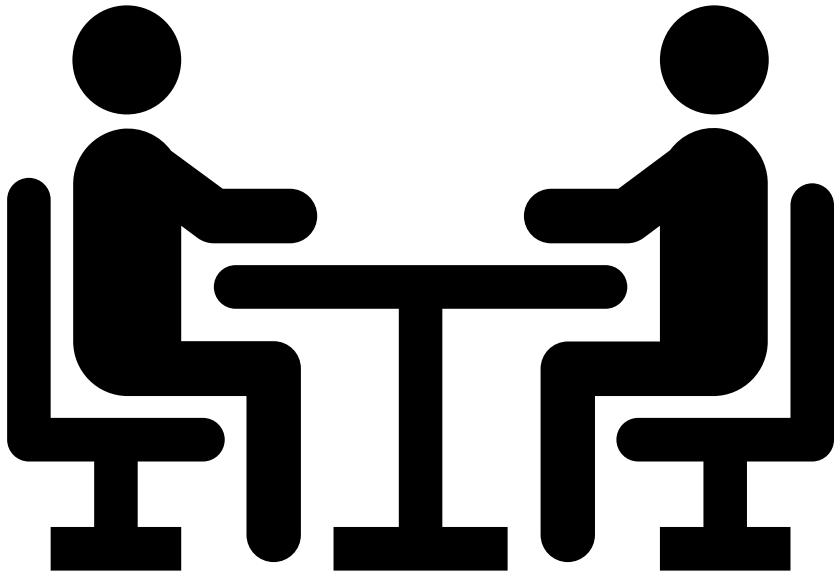


Case #4

- Vanessa is a 27-year-old cisgender woman who presents to clinic to establish care after being diagnosed with HIV.
- She is in a long-term relationship with a cisgender male partner who was also recently diagnosed with HIV.
- Her initial laboratory studies reveal a CD4+ T-lymphocyte count of 688 cell/µL and a HIV-1 RNA polymerase chain reaction (PCR) value of 110,300 copies/mL. She has a positive HLA-B*5701 result. Her baseline HIV genotype shows no significant drug resistance mutations (i.e., wild-type).
- When asked about her intentions regarding family planning, she is interested in having a child in the near future. She and her partner use condoms inconsistently and she is not interested in starting hormonal contraception.
- **What ART regimen would you recommend?**

Discussion

- Review the case
- Think about your practice setting
- Discuss with your colleagues



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Case #4: Discussion

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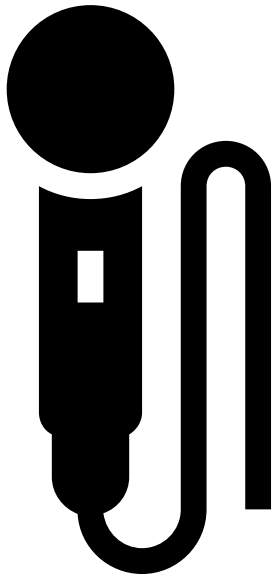
- **What ART regimen would you recommend?**

Debrief

- Share part of your group's discussion
- Share your questions and/or concerns



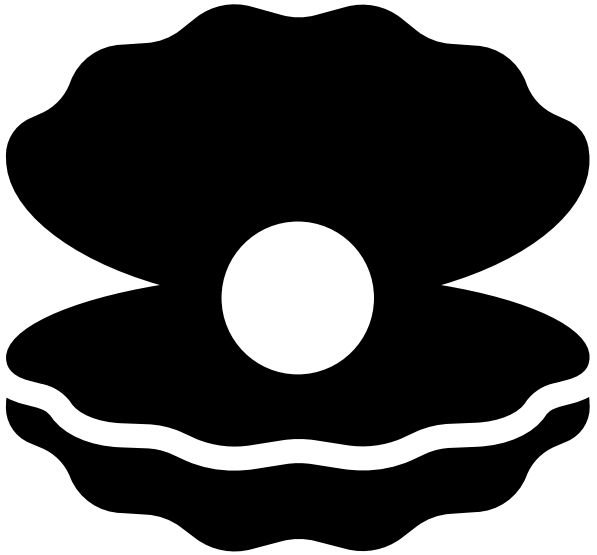
Initial ART for Persons of Childbearing Potential: Selecting ARVs

- Perform pregnancy test before ART start
- Choose ARVs through shared decision-making after considering available data on potential teratogenicity, effectiveness, tolerability, pill number, etc.
- Preferred ART if trying to conceive or during pregnancy:
  - **INSTI** (i.e., DTG, RAL) or **boosted PI** (ATV/r or DRV/r), **PLUS**
  - **2 NRTIs** (TDF/FTC, TDF/3TC, TAF/FTC, or ABC/3TC [if HLA-B*5701 negative])
- Some ARVs are not recommended during pregnancy

Case #4: Pearl

- Persons of childbearing potential should be started on a regimen based upon the patient's preference and potential teratogenicity of the antiretroviral.

- Preferred regimens during pregnancy include a nucleoside reverse transcriptase (NRTI) backbone combined with an anchor drug (such as a boosted protease inhibitor or an integrase strand transfer inhibitor).



Case #5A

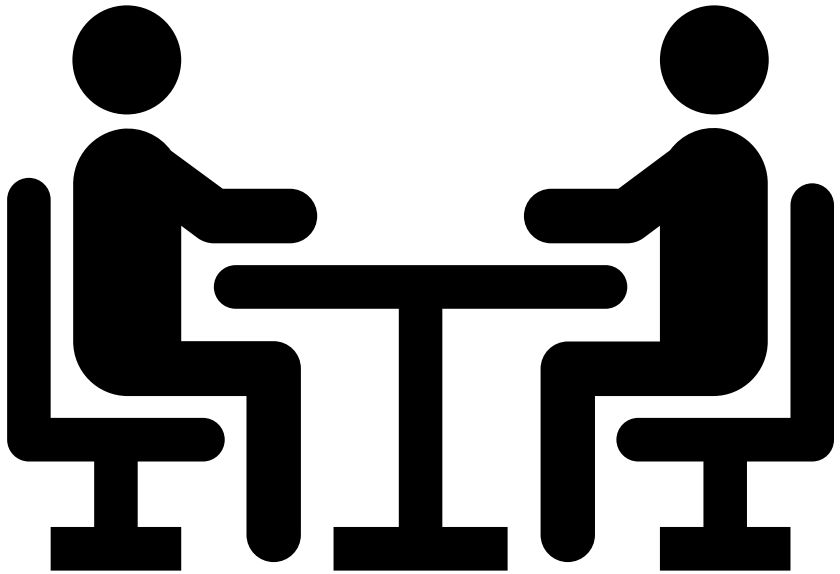
- Kyle is a 35-year-old cisgender man with HIV who presents for follow-up.
- He has not been engaged in care for the past 16 months and “has been off” his HIV treatment regimen (bictegravir/emtricitabine/tenofovir alafenamide; BIC/FTC/TAF) for the last four months. He notes he stopped it abruptly at the time (i.e., did not try to “stretch out” the supply by taking it every few days) and took it consistently until that point. He stopped treatment due to an insurance and cost issue.
- Prior to initiating ART, he had no identified drug resistance mutations (i.e., “wild type” genotype).
- **What do you recommend at this time?**

Case #5B

- Allie is a 38-year-old cisgender woman with HIV who presents to clinic for follow up.
- She reports she has had “a lot of stuff” happen in her life since she last saw you six months ago. She lost her prior job and has intermittently experienced homelessness.
- She was afraid of running out of her HIV medication (emtricitabine/rilpivirine/tenofovir alafenamide; FTC/RPV/TAF), so she has been taking her single-tablet regimen every other day for the last three months to “stretch out” her supply. She denies issues with tolerability of her ART regimen.
- **What do you recommend at this time?**

Discussion

- Review the case
- Think about your practice setting
- Discuss with your colleagues



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Case 5A and Case 5B: Discussion

Kyle

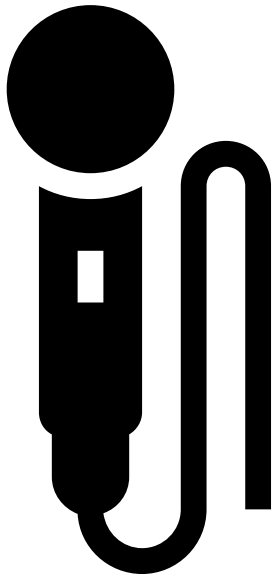
- Took BIC/FTC/TAF
- Off treatment for 4 months
- Stopped abruptly
- No prior resistance

Allie

- Took FTC/RPV/TAF
- “Stretched out” by taking every other day

Debrief

- Share part of your group's discussion
- Share your questions and/or concerns



Managing Nonadherence and ART Reinitiation

- Addressing barriers to adherence is essential and often requires a health care team to address
- ART resistance is unlikely to develop when medication is taken consistently and then stopped abruptly.
- Drug resistance is more likely to develop when ART is taken intermittently (e.g., every other day, only 4-5 times a week, with repeated gaps every 30 days between refills, etc.).
- HIV genotypes may be helpful in identifying resistance, but they are less sensitive when no ART has been recently taken.
- ***Details matter! Reach out for assistance!***
  Participate in ART Case Conference at VUMC!

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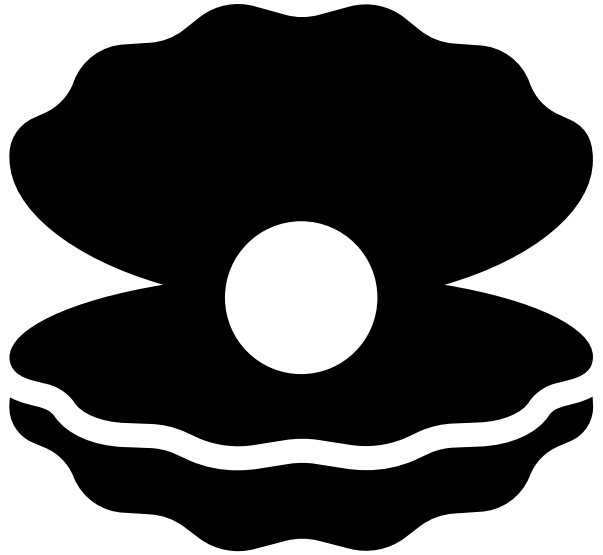
Case #5: Pearl

- When individuals previously took antiretroviral medications consistently, achieved HIV suppression, had no tolerability issues, and are likely to adhere to future therapy after resolution of prior barriers to adherence, it is appropriate to restart the same ART after a period of nonadherence.

- HIV drug resistance is more likely to be observed when ART is taken intermittently (e.g., every other day, only 4-5 times a week, repeated gaps every 30 days between refills, etc.) than when stopped abruptly.



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Objectives ACCOMPLISHED

After this session, you now can:

- Select initial antiretroviral therapy (ART) for treatment naïve individuals and for persons of childbearing potential
- Implement rapid ART initiation in appropriate settings
- Distinguish when to initiate ART in the setting of opportunistic infections (OIs)
- Contrast management for different patterns of nonadherence

MISSION ACCOMPLISHED

You are an HIV Champion!

AETC Program National Centers and National HIV Curriculum

- National Coordinating Resource Center serves as the central web-based repository for AETC Program training and capacity building resources; its website includes a free virtual library with training and technical assistance materials, a program directory, and a calendar of trainings and other events. Learn more: https://aidsetc.org

- National Clinician Consultation Center provides free, peer to peer, expert advice for health professionals on HIV prevention, care, and treatment and related topics. Learn more: https://nccc.ucsf.edu

- National HIV Curriculum provides ongoing, up to date HIV training and information for health professionals through a free, web-based curriculum; also provides free CME credits, CNE contact hours, CE contact hours, and maintenance of certification credits. Learn more: www.hiv.uw.edu

Thank You!

Questions?

Cody.A.Chastain@VUMC.org

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