ACTHIV 2016: A State-of-the-Science Conference for Frontline Health Professionals
Overview of ARVs and Current DHHS Guidelines

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UT Southwestern Medical Center
Conflict of Interest

• Grant Support: Merck & Co, BMS
• Scientific Advisory Board: Theratechnologies, BMS, Merck & Co.

• Sincere gratitude to Raj Gandhi and Monica Gandhi (yes, they’re related…)
Case: 48-Yr-Old Man With HIV Infection and Multiple Medical Problems

- 48-yr-old man presents with newly diagnosed HIV infection
- Tested for HIV infection by his PCP, who has been treating him for hypertension and DM for 12 years
- Hospitalized 2 years earlier for chest pain and diagnosed with NSTEMI
- Reports he has been better in the last yr at sticking to his medical regimen and now rarely misses a dose of his prescribed medications (metformin, glipizide, aspirin, metoprolol, lisinopril, and atorvastatin)
Case: Laboratory Analysis

- CD4+ count 388 cells/mm³ (24%), HIV-1 RNA 147,445 copies/mL
- HIV genotype K103N
- HLA-B*5701 negative
- BUN/Cr 20/1.5, eGFR\textsubscript{CG} 55 mL/min
- ALT/AST normal, HBV immune, HCV negative
- Last recorded HbA1c 6.5
- His hypertension and DM are relatively well controlled
- He is interested in starting ART
Which NRTI combination would you recommend?

A. Abacavir/lamivudine (ABC/3TC)
B. Tenofovir DF/emtricitabine (TDF/FTC)
C. Tenofovir alafenamide/emtricitabine (TAF/FTC)
D. I would use lamivudine or emtricitabine without other NRTIs
E. I would not use NRTIs in this patient
F. Unsure

- 48-yr-old man recently diagnosed with HIV infection
- HIV-1 RNA 147,445 copies/mL, CD4+ count 388 cells/mm³
- HTN and DM controlled on medication, history of NSTEMI
- Cr/BUN 1.5/20, eGFR 55 mL/min, HbA1c 6.5
- HBV immune, HCV negative, HLA-B*5701 negative
• View results in your browser: https://api.cvent.com/polling/v1/api/polls/s pdlllgq
Which other agents would you use in the regimen?

A. Boosted PI
B. INSTI
C. NNRTI
D. Boosted PI + INSTI
E. Unsure

- 48-yr-old man recently diagnosed with HIV infection
- HIV-1 RNA 47,445 copies/mL, CD4+ count 388 cells/mm³
- HTN and DM controlled on medication, history of NSTEMI
- Cr/BUN 1.5/20, eGFR 55 mL/min, HbA1c 6.5
- HBV immune, HCV negative, HLA-B*5701 negative
• View results in your browser: https://api.cvent.com/polling/v1/api/polls/s p-hpzycy
Objectives

At the end of this activity, participants should be better able to:

• Describe the characteristics of the six classes of antiretroviral drugs
• Identify the recommended antiretroviral regimens for treatment naïve patients
• Select an initial antiretroviral regimen based on patient characteristics
HIV Life Cycle and Antiretroviral Targets

1) Virus Entry
2) Reverse transcriptase
3) Integration
4) Transcription
5) Translation
6) Cleavage
7) Packaging
8) Maturation
9) Re-infection

CD4 receptor (CXCR4, CCR5)

Source: R Gandhi. ACTHIV 3.28.15
HIV Life Cycle and Antiretroviral Targets

1) Virus Entry
2) Reverse transcriptase
   RNA → DNA
3) Integration
4) Transcription
5) Translation
6) Cleavage
7) Packaging
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9) Re-infection

Source: R Gandhi. ACTHIV 3.28.15

Nucleos(t)ide reverse transcriptase inhibitors (NRTIs):

Non-nucleoside reverse transcriptase inhibitors (NNRTIs):

Protease inhibitors (PIs):

Integrase strand transfer inhibitors (INSTI):

Fusion (entry) inhibitor: e.g. enfuvirtide (C34K9A)

CCR5 receptor antagonist: e.g. maraviroc
## Antiretroviral Drugs and Combinations

### Nucleos(t)ide RTIs
- Zidovudine, AZT (*Retrovir*)
- Abacavir, ABC (*Ziagen*)
- Lamivudine, 3TC (*Epivir*)
- Didanosine, ddl (*Videx*)
- Stavudine, d4T (*Zerit*)
- Tenofovir, TDF (*Viread*)
- Emtricitabine, FTC (*Emtriva*)
- Tenofovir Alafenamide
- AZT/3TC (*Combivir*)
- AZT/3TC/ABC (*Trizivir*)
- ABC/3TC (*Epzicom*)
- TDF/FTC (*Truvada*)
- TAF/FTC (*Descovy*)

### NNRTIs:
- Delavirdine (DLV)
- Nevirapine, NVP (*Viramune*)
- Efavirenz, EFV (*Sustiva*)
- Etravirine (*Intelence*)
- Rilpivirine (*Edurant*)

### Protease inhibitors:
- Indinavir, IDV (*Crixivan*)
- Saquinavir, SQV (*Invirase*)
- Nelfinavir, NFV (*Viracept*)
- Amprenavir, APV (*Agenerase*)
- Atazanavir, ATV (*Reyataz*)
- Fosamprenavir, FPV (*Lexiva*)
- Lopinavir/ritonavir (*Kaletra*)
- Tipranavir (*Aptivus*)
- Darunavir (*Prezista*)

### Fusion inhibitors:
- Enfuvirtide, ENF or T20 (*Fuzeon*)

### Single Tablet Regimens
- EFV/FTC/TDF (*Atripla*)
- RPV/FTC/TDF (*Complera*)
- RPV/FTC/TAF (*Odefsey*)
- EVG/cobi/FTC/TDF (*Stribild*)
- EVG/cobi/FTC/TAF (*Genvoya*)
- DTG/ABC/3TC (*Triumeq*)

### CCR5 receptor blockers
- Maraviroc (*Selzentry*)

### Integrase inhibitors
- Raltegravir (*Isentress*)
- Elvitegravir (EVG)
- Dolutegravir (DTG) (*Tivicay*)
Abacavir/Lamivudine (ABC/3TC)

- **Hypersensitivity Reactions (HSR):**
  - 5 to 8%; highly associated with HLA-B*5701 allele: approximately 50% of HLA-B*5701 positive; Caucasians++
  - Never re-challenge following discontinuation for suspected HSR, regardless of their HLA-B*5701 status.

- **Cardiovascular Risk:**
  - Association b/w ABC use and myocardial infarction (MI) reported in some studies; particularly with pre-existing CV risk
  - No consensus on the risk and its mechanism.

- **Other Considerations:**
  - No renal dysfunction; No dose adjustment in CKD.
  - A5202: More failures than TDF/FTC in VL>100K
  - Co-formulated with DTG in single-tablet regimen

Saag 2008; Sabin 2008; Sax, 2009; Sax, 2011; Walmsley, 2013
**Tenofovir/Emtricitabine (TDF/FTC)**

- **Adverse Effects:**
  - New onset or worsening renal impairment; Avoid with CrCl<60; if used, dose adjust when CrCl<50
  - Concomitant use of a PK-enhanced regimen (with a PI or EVG) can increase TDF concentrations; and probably renal risk.
  - Greater BMD decrease than other NRTIs
  - Reported cases of osteomalacia assoc w/ proximal tubulopathy

- **Other Considerations:**
  - TDF/FTC available FDC with EFV, EVG/c, and RPV
  - Assess renal function, urine glucose & protein before initiation and periodically during treatment
  - Both TDF and FTC are active against HBV

Lucas 2014; Kearney 2006; Stellbrink 2010;
**NNRTIs**

- Major disadvantages:
  - Transmitted NNRTI resistance in ART-naïve patients higher than in other classes (~7.5%)
  - Resistance testing should be performed at baseline
- High-level resistance to all NNRTIs (except ETR) may occur with a single mutation; within-class cross-resistance is common.
- EFV: superiority or non-inferiority to several ARVs until recently: DTG (SINGLE); RPV (STaR);
- In RPV-treated patients, the presence of RPV mutations at virol failure may confer cross resistance to other NNRTIs

Snedecor 2013; Cohen 2012; Walmsley 2013; Cohen 2014
Efavirenz and Rilpivirine

- EFV associated with more CNS side effects, including suicidal ideation; Fewer with RPV (ECHO; THRIVE)
- RPV requires acidic gastric pH for absorption
  - H2 antagonists: separate 12 hours before or 4 h after; Proton pump inhibitors: Contraindicated
- RPV < EFV in pts with BL viremia >100K (ECHO, THRIVE); RPV > EFV in pts with BL viremia <100K (STaR)
- RPV is formulated in FDC with TAF/FTC and with TDF/FTC. RPV/TAF/FTC is the smallest of tablets in STRs.
- RPV/TAF/FTC and RPV/TDF/FTC are given once daily, and must be administered with a meal (at least 390 kcal).

Mollan 2014; Cohen 2013; Cohen 2014
Protease Inhibitors

• With PK enhancement, demonstrated virologic potency, durability in treatment-naive patients, and a high genetic barrier to resistance.

• Few or no mutations detected at virologic failure
  – May be useful with poor adherence
  – All PIs (PK enhanced by either RTV or COBI) inhibit the cytochrome (CYP) 450 3A isoenzyme, which may lead to significant drug-drug interactions

• Metabolic abnormalities (including dyslipidemia and insulin resistance) associated with PI use.
  – ASCVD associated with older PIs; not with ATV; no data on DRV

Lathouwers 2011; Worm 2010; Monforte 2013
Darunavir and Atazanavir

• Darunavir:
  – Rash; usually mild to moderate & self-limited
  – Contains sulfonamide moiety; use with caution in severe sulfa allergic patients

• Atazanavir
  – Hyperbilirubinemia; Requires acid pH for absorption
  – Similar virologic efficacy, and similar changes in indirect bili, creat, when used with RBV or Cobi boosting (all with TDF/FTC)

• Head to head Comparison: DRV/r vs. ATV/r: ACTG 5257:
  – ATV/r inferior to DRV/r but due to tolerability, not VF
  – Similar lipid changes with ATV/r and DRV/r.
  – Greater BMD ⇩ with ATV/r and DRV/r than with RAL

Ortiz 2008; Orkin 2013; Gallant 2013; Lennox 2014;
Integrase Strand-Transfer Inhibitors

- All INSTI are generally well tolerated, with insomnia being reported in some patients.
- Depression and suicidal ideations reported, particularly in patients with history of psychiatric illnesses.
- Absorption may be reduced by polyvalent cations: give 2 h before or 6 h after (or w/ food)
Dolutegravir

- DTG is generally well tolerated. Insomnia and headache.
- Once daily with or w/o food in Rx-naive pts
- Mild ↑ in Creat due to ↓ in tubular secretion; No dose adjustment with dialysis (not dialyzed)
- Few DTG drug interactions.
  - ↑ metformin levels approximately two-fold;
  - Rifampin ↓ DTG levels, therefore, an increase in dosing of DTG to 50 mg twice daily is required.
- No treatment-emergent drug resistant mutations
- Virologic superiority to EFV (SINGLE) and DRV (FLAMINGO) mainly because of d/c in comparator arms; Non-inferior to RAL (SPRING-2)

Raffi 2013; Pappa 2014; Feinberg 2013; Molto, CROI 2016
Elvitegravir

- Metabolized primarily by CYP3A enzymes; → CYP3A inducers or inhibitors may alter EVG concentrations.
- EVG is available as a component of two FDCs:
  - EVG 150mg/cobi 150mg/TDF 300mg/FTC 200mg)
  - EVG 150mg/cobi 150mg/TAF 10mg/FTC 200mg).
- EVG/c combinations approved for CrCl >70
- INSTI mutations in some EVG/c/TDF/FTC failures; Cross-resist to RAL but susceptibility to DTG
- EVG/c/TDF/FTC non-inferior to EFV/TDF/FTC and to ATV/r + TDF/FTC

Wohl 2014; Clumeck 2013; Matthias 2009; E/c/F/FTC package insert
**Raltegravir**

- RAL associated with CPK elevations. Myositis and rhabdomyolysis have been reported.
- RAL must be administered twice daily—a potential disadvantage when comparing RAL-based treatment with other Recommended regimens.
- RAL has a lower genetic barrier to resistance than RTV-boosted PIs and DTG.
- RAL non-inferior to DTG (SPRING-2); RAL superior (combined virologic and tolerability endpoints) to ATV/r and DRV/r (A5257)

Lennox 2014; Raffi 2013;
A Few Cardinal Principles of Initial HIV Therapy

• Assess Readiness:
  – Prepare for the Long Haul; Anticipate Complications: It’s a marathon, not a sprint
  – Emphasize urgency for ALL patients

• Individualize Therapy
  – Co-Infections: HBV, HCV, TB, Others;
  – Co-Morbidities: CVD, CKD, Osteoporosis
  – HIV Parameters: Baseline viremia, CD4 Count
  – Drug-drug interactions

• Cost (It’s not a 4-letter word...) and other barriers to care
Anticipate Chronic Complications of HIV Infection When Initiating Therapy

#1: THE PATIENT’S RISK
Individual and social factors
- Higher rate of traditional risk factors: smoking, dyslipidemia, HTN, diabetes, Obesity

#2: THE PATHOGENS’ DIRECT EFFECTS
- Inflammation and Immune activation
- Co-Infections: HCV, HBV, TB

#3: THE TREATMENT(S)
- Toxicities (incl. hypersensitivity)
- Interactions

<table>
<thead>
<tr>
<th>Recommended Regimens (n=6)</th>
<th>INSTI (n=5)</th>
<th>PI (n=1)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dolutegravir/ABC/3TC</td>
<td>Darunavir/ritonavir +TDF/FTC</td>
</tr>
<tr>
<td></td>
<td>Dolutegravir + TDF/FTC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Elvitegravir/cobi/TDF/FTC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Elvitegravir/cobi/TAF/FTC – added 11/15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Raltegravir +TDF/FTC</td>
<td></td>
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</tbody>
</table>

§ Only if CrCl >70

http://www.aidsinfo.nih.gov/ContentFiles/AdultandAdolescentGL.pdf
## Alternative Regimens

<table>
<thead>
<tr>
<th>Regimen Type</th>
<th>Regimen Options</th>
</tr>
</thead>
</table>
| NNRTI (n=2)  | Efavirenz/TDF/FTC  
Rilpivirine/TDF/FTC* |
| PI (n=5)     | ATV/r or cobi§ + TDF/FTC  
DRV/cobi§ + TDF/FTC  
DRV/r or cobi + ABC/3TC |

*Only if VL <100K and CD4 >200. §Only if Cr Cl >70

Effective and tolerable but have potential disadvantages, have limitations for use in certain patient populations, or have less supporting data than Recommended Regimens

An alternative regimen may be the preferred regimen for some patients
### Other Regimens

| INSTI (n=1) | RAL + ABC/3TC |
| NNRTI (n=1) | EFV + ABC/3TC (VL <100 K) |
| PI (n=4) | ATC/c or ATV/r + ABC/3TC (VL <100 K) |
| | LPV/r + ABC/3TC |
| | LPV/r + TDF/FTC |

### Other Regimens When TDF or ABC Cannot Be Used

- DRV/r + RAL (VL <100K, CD4 >200)
- LPV/r (twice daily) + 3TC (twice daily)

In comparison with Recommended and Alternative regimens, may have reduced virologic activity, limiting supporting data, greater toxicities, higher pill burden, more drug interaction, or limitations for use in certain patient populations.
Main Changes in “What to Start” – 2015

1. EFV/TDF/FTC moved to Alternative based on concerns regarding tolerability, particularly CNS side effects and potential suicidality

2. ATV/r + TDF/FTC moved to Alternative

3. Regimens previously recommended only for pts with VL <100,000 moved to Alternative or Other: RPV/TDF/FTC, ATV/r or EFV +ABC/3TC

4. DRV/r + RAL and LPV/r + 3TC included among Other regimens but only for patients who cannot take TDF or ABC

5. ATV/cobi and DRV/cobi included among Alternative regimen options
Change 1: EFV/TDF/FTC Moved to Alternative

- EFV has a long track record of safety and effectiveness but compared with new regimens, decreased tolerability, largely because of CNS side effects
  - In SINGLE, DTG + ABC/3TC superior to EFV/TDF/FTC, largely because of more treatment discontinuations in the EFV group (10% vs. 2%)
  - More tolerability failures with EFV compared with RPV

Walmsley S et al, NEJM, 2013
Efavirenz and Suicidality

- In retrospective analysis of multiple ACTG studies, increased suicidality in those randomized to EFV-containing regimens as compared to EFV-free regimens

Mollan K et al, Ann Int Med, 2014
Change 2: ATV/r + TDF/FTC Moved to Alternative ATP/r vs. DRV/r vs. RAL in ACTG A5257

1. Combined tolerability and virology Efficacy: RAL sup. to both PI/r regimens; DRV/r superior to ATV/r
2. Virol failure: All three regimens equivalent
3. Tolerability failure: RAL: 1%; DRV/r: 5%; ATV/r: 14% (mainly hyperbilirubinemia/jaundice)

Change 3: Regimens Recommended Only for Patients with VL <100,000 Moved to Alternative or Other

- Regimens not recommended for patients with VL >100,000: ATV/r or EFV + ABC/3TC (ACTG A5202)\(^1\); RPV/TDF/FTC\(^2\)

<table>
<thead>
<tr>
<th>Regimen</th>
<th>Wk 96 VL &lt;50</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECHO/THRIVE</td>
<td></td>
</tr>
<tr>
<td>Double-blind,</td>
<td>78%</td>
</tr>
<tr>
<td>double dummy</td>
<td></td>
</tr>
<tr>
<td>RPV + 2 NRTI*</td>
<td>78%</td>
</tr>
<tr>
<td>EFV + 2 NRTI*</td>
<td>78%</td>
</tr>
</tbody>
</table>

- *ECHO: TDF/FTC; THRIVE: investigator selected NRTI

- Pts with pre-ART VL >100 K, CD4<200: more virologic failures with RPV

Change 4: NRTI-limiting Regimens for Patients who cannot take TDF or ABC

- DRV/r + RAL (NEAT001)\textsuperscript{1} or LPV/r + 3TC (GARDEL)\textsuperscript{2}

- DRV/r + RAL non-inferior to DRV/r + TDF/FTC overall but among those with:
  - CD4 count <200: DRV/r + RAL inferior to DRV/r + 2 NRTI
  - VL >100 K: More failures in NRTI-sparing group

- LPV/r + 3TC non-inferior to LPV/r + 2 NRTI
  - LPV/r + 3TC: greater pill burden and potential toxicities than other 1\textsuperscript{st} line regimens

\textsuperscript{1}Raffi F et al, Lancet, 2014; \textsuperscript{2}Cahn P et al, Lancet 2014
Main Changes in “When to Start” and “What to Start” – Update

1. Increased Strength of recommendation on initial ART to “AI” for all HIV-infected patients, regardless of CD4 count.
   a. To reduce HIV-associated morbidity and mortality
   b. To decrease risk of HIV transmission

2. Elvitegravir/cobicistat/tenofovir alafenamid/emtricitabine (E/C/F/TAF) added to the “Recommended Regimens” list for patients with estimated creatinine clearance $\geq 30 \text{ mL/min}$ (AI).
START: Immediate vs Deferred Therapy for Asymptomatic, ART-Naive Pts

- International, randomized trial

HIV-positive, ART-naive adults with CD4+ cell count > 500 cells/mm³ (N = 4685)

Immediate ART
ART initiated immediately following randomization (n = 2326)

Deferred ART
Deferred until CD4+ cell count ≤ 350 cells/mm³, AIDS, or event requiring ART (n = 2359)

- Primary composite endpoint (target = 213)
  - Serious AIDS or death from AIDS
  - Serious non-AIDS events and death not attributable to AIDS
    - CVD, ESRD, decompensated liver disease, non-AIDS–defining cancers

**Immediate ART Prevents AIDS- and Non-AIDS Related Events**

<table>
<thead>
<tr>
<th>Components (Serious Events)</th>
<th>Deferred ART (n=2359)</th>
<th>Immediate ART (n=2326)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composite Endpoint</td>
<td>96</td>
<td>57% Reduction (P&lt;0.001)</td>
</tr>
<tr>
<td>AIDS-Related</td>
<td>50</td>
<td>72% Reduction (P&lt;0.001)</td>
</tr>
<tr>
<td>Non-AIDS Related</td>
<td>47</td>
<td>39% Reduction (P=0.04)</td>
</tr>
</tbody>
</table>

- TB, KS, lymphoma — most common AIDS-related events — all less frequent in immediate-ART group
- Cancer rates (combining AIDS/non-AIDS) lower in immediate-ART group
- Decreased bacterial infections, improved quality of life in immediate ART group

Tenofovir alafenamide (TAF)

- TAF: pro-drug of tenofovir that concentrates in cells, converted to tenofovir (TFV)
- TAF: 90% lower plasma TFV levels compared to TDF (tenofovir disoproxil fumarate)
- TAF compared to TDF for initial therapy:

Change 2: E/C/F/TAF added to Recommended regimens

Virologic efficacy: E/C/F/TAF non-inferior to E/C/F/TDF

TAF associated with:
- Smaller decrease in bone mineral density (BMD)
- Smaller decrease in eGFR
- Less proteinuria
- However, greater increases in cholesterol, LDL, HDL, TGs (identical changes in TC:HDL)

Similar results in switch studies
TAF approved down to eGFR > 30
TAF active against HBV

Elvitegravir/c/FTC/TAF – Nov. 2015
FTC/TAF – April 2016
Darunavir/c/FTC/TAF – phase III

## First-line Treatment: Menu-Driven

### Two NRTIs
- TDF/FTC
- TAF/FTC
- ABC/3TC

### Plus
- **Integrase inhibitor:**
  - Elvitegravir/cobi*, Dolutegravir**
  - or

### Boosted PI:
- Ritonavir-boosted darunavir
- or

### NNRTI:
- Rilpivirine* (if CD4 >200, VL <100,000)

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**TDF:** tenofovir disoproxil fumarate  
**TAF:** tenofovir alafenamide

*Coformulated with TDF/FTC and TAF/FTC  
**Coformulated with ABC/3TC
# Choosing Between NRTIs

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Preferred Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLA-B5701+</td>
<td>TDF, TAF (cannot use ABC)</td>
</tr>
<tr>
<td>Kidney Disease</td>
<td>ABC, TAF</td>
</tr>
<tr>
<td>High cardiac risk</td>
<td>Favor TDF, TAF?</td>
</tr>
<tr>
<td>Hyperlipidemia</td>
<td>Favor TDF</td>
</tr>
<tr>
<td>Bone disease</td>
<td>Favor ABC, TAF</td>
</tr>
<tr>
<td>Pre-ART VL &gt;100 K</td>
<td>If using with EFV or ATV/r → TDF/FTC</td>
</tr>
<tr>
<td>HBV</td>
<td>TDF/FTC, TAF/FTC or TDF/3TC</td>
</tr>
</tbody>
</table>
Which NRTI combination would you recommend?

A. Abacavir/lamivudine (ABC/3TC)
B. Tenofovir DF/emtricitabine (TDF/FTC)
C. Tenofovir alafenamide/emtricitabine (TAF/FTC)
D. I would use lamivudine or emtricitabine without other NRTIs
E. I would not use NRTIs in this patient
F. Unsure

- 48-yr-old man recently diagnosed with HIV infection
- HIV-1 RNA 147,445 copies/mL, CD4+ count 388 cells/mm³
- HTN and DM controlled on medication, history of NSTEMI
- Cr/BUN 1.5/20, eGFR 55 mL/min, HbA1c 6.5
- HBV immune, HCV negative, HLA-B*5701 negative
• View results in your browser: https://api.cvent.com/polling/v1/api/polls/spbo7slt
### Choosing Between INSTI, NNRTI, PI: Pre-ART Characteristics

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Consideration</th>
</tr>
</thead>
</table>
| CD4 < 200                                     | Because of higher rates of virologic failure, do not use:  
• RPV-based regimens  
• DRV/r + RAL |
| HIV RNA > 100K                                | Do not use the following regimens:  
• RPV-based regimens  
• ABC/3TC with EFV or ATV/r  
• DRV/r + RAL |
| Must treat before drug resistance results known or uncertain adherence | Avoid NNRTI-based regimen. Consider using boosted PI or DTG |

http://www.aidsinfo.nih.gov/ContentFiles/AdultandAdolescentGL.pdf
Which other agents would you use in the regimen?

A. Boosted PI
B. INSTI
C. NNRTI
D. Boosted PI + INSTI
E. Unsure

- 48-yr-old man recently diagnosed with HIV infection
- HIV-1 RNA 47,445 copies/mL, CD4+ count 388 cells/mm³
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• View results in your browser: https://api.cvent.com/polling/v1/api/polls/pj2qk9e
## ART Specific Characteristics

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Consideration</th>
</tr>
</thead>
<tbody>
<tr>
<td>One pill once daily regimen desired</td>
<td>Options include:</td>
</tr>
<tr>
<td></td>
<td>• DTG/ABC/3TC</td>
</tr>
<tr>
<td></td>
<td>• EFV/TDF/FTC</td>
</tr>
<tr>
<td></td>
<td>• EVG/c/TDF/FTC or EVG/c/TAF/FTC</td>
</tr>
<tr>
<td></td>
<td>• RPV/TDF/FTC (if VL &lt;100 K, CD4 &gt;200)</td>
</tr>
<tr>
<td>Food effects</td>
<td>Take with food:</td>
</tr>
<tr>
<td></td>
<td>• Boosted ATV or DRV</td>
</tr>
<tr>
<td></td>
<td>• EVG/c/TDF/FTC or EVG/c/TAF/FTC</td>
</tr>
<tr>
<td></td>
<td>• RPV/TDF/FTC (at least 390 cal)</td>
</tr>
<tr>
<td></td>
<td>Take on empty stomach:</td>
</tr>
<tr>
<td></td>
<td>• EFV-based regimens</td>
</tr>
</tbody>
</table>
## Presence of Other Conditions

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Consideration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychiatric illnesses</td>
<td>Consider avoiding EFV</td>
</tr>
<tr>
<td>Acid-lowering therapy</td>
<td>Caution with RPV, ATV</td>
</tr>
<tr>
<td>Concomitant CYP3A4 metabolized medication</td>
<td>Avoid or caution with PIs, cobi</td>
</tr>
<tr>
<td>Polyvalent cation (Al, Ca, Mg, Fe, Zn)</td>
<td>Caution with INSTI (reduced absorption)</td>
</tr>
<tr>
<td>Metformin</td>
<td>Caution with DTG</td>
</tr>
</tbody>
</table>

http://www.aidsinfo.nih.gov/ContentFiles/AdultandAdolescentGL.pdf
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