HIV Pharmacotherapy Review

The following is a summary of pharmacotherapy recommendations for **adolescents** and **adults** with **HIV-1 infection**, primarily from the US Department of Health and Human Services.

Note: This is a simplified summary of guideline-recommended ART in patients with HIV. It is not comprehensive. When choosing a treatment, patient-specific factors should be considered, including treatment efficacy, side effect profile, number of pills required/dosing frequency, likelihood of drug interactions, resistance testing results, comorbidities (e.g., renal/hepatic impairment), availability of treatment, and cost.

Baseline Evaluation

- HIV RNA level (viral load)
- HIV antigen/antibody
- CD4 cell count
- HLA-B*5701 screening
- Genotypic drug-resistance testing
- Hepatitis A, B, and C serologies
- Serum lipids
- Complete blood count
- Chemistry panel
- Urinalysis
- Immunization history
- Pregnancy test

Additional testing for STIs, opportunistic infections, and cancer is recommended

Treatment Goals

➤ Achieve and sustain maximum suppression of HIV RNA in the plasma
- *Ideally below the lower limit of detection (undetectable = untransmittable, or "U=U")*

➤ Restore and maintain immune system function
- *Ideally CD4 count >500 cells/mm3*

➤ Minimize HIV-related health complications and extend the length/quality of life

➤ Prevent transmission of HIV to other persons

Drug Abbreviations

INSTIs	NRTIs
BIC: bictegravir	**3TC**: lamivudine
CAB-LA: long-acting cabotegravir	**ABC**: abacavir
DTG: dolutegravir	**FTC**: emtricitabine
	TAF: tenofovir alafenamide
	TDF: tenofovir disoproxil fumarate
Pharmacokinetic Booster	**Protease Inhibitor**
COBI: cobicistat	**DRV**: darunavir

Initial ART for Most Persons with HIV

For nonpregnant individuals with HIV with **no prior** history of using CAB-LA as PrEP, the following ART regimens are recommended:

BRAND NAME(S)	GENERIC ABBREVIATIONS
Biktarvy*	BIC/TAF/FTC
Dovato^	DTG/3TC
Tivicay *plus*: **Truvada**†, or **Descovy**†, or **Cimduo**†	DTG *plus*: TDF/FTC, or TAF/FTC, or TDF/3TC

For individuals with HIV **and** a history of using **CAB-LA** as **PrEP**, INSTI genotypic resistance testing should be done **before** the start of ART. If treatment is to be begun **prior** to results of genotypic testing, the following regimens are recommended:

Symtuza	DRV/COBI/TAF/FTC
Prezcobix *plus*: **Truvada**, or **Descovy**, or **Cimduo**	DRV/COBI *plus*: TDF/FTC, or TAF/FTC, or TDF/3TC

* Biktarvy is an **alternative** regimen for use in pregnancy. However, there are other **preferred** regimens.

^ **Do not use** in patients with viral load >500,000 copies/mL, hepatitis B coinfection, or who need to initiate ART prior to receiving results of genotypic resistance or hepatitis B testing.

† **Preferred** regimens for patients of childbearing age who may **become pregnant**, as these regimens are safe to **initiate** and **continue** in pregnancy.

Monitoring

This is a simplified summary of routine monitoring parameters following baseline evaluation and initiation of ART. If is not comprehensive. Additional testing is warranted upon ART modification, delay, or failure (or when indicated).

CD4 Count	Obtain upon initiation/modification of ART, then:
<300 cells/mm3	• Every 3 months — *Less frequent monitoring (e.g., every 6 months) may be considered in those with 2 or more years of consistently suppressed viral load*
300-500 cells/mm3	• Every 6 months during the first 2 years of ART • Every 12 months after the first 2 years of ART *(with consistently suppressed viral load)*
>500 cells/mm3	• Every 6 months during the first 2 years of ART • Monitoring optional after the first 2 years of ART *(with consistently suppressed viral load)*
Viral Load	Obtain upon initiation/modification of ART, again 4-8 weeks later, then:
≥50 copies/mL	• Every 4-8 weeks
<50 copies/mL	• Every 3-6 months *Increased monitoring frequency may be necessary for individuals struggling with ART adherence or at risk of nonadherence.* *For patients who have been adherent, show consistent viral suppression, and have had stable immune status for over 1 year, the frequency of monitoring can be decreased to once every 6 months.*
BMP	Obtain upon initiation/modification of ART, again 4-8 weeks later, then every 6 months

*Note: If ART is started **promptly** after HIV diagnosis, there is no need for **repeat** baseline laboratory tests.*

Primary Prophylaxis for Opportunistic Infection

Indication	Preferred Prophylaxis*
Pneumocystis pneumonia (PCP)	
CD4 count **100-200 cells/mm3** if viral load detectable *or* CD4 count **<100 cells/mm3**	• **SMX-TMP DS**: 1 tablet PO daily, or • **SMX-TMP SS:** 1 tablet PO daily
Toxoplasma gondii encephalitis	
CD4 count **<100 cells/mm3** *plus* *Toxoplasma* IgG-positive	• **SMX-TMP DS**: 1 tablet PO daily
Mycobacterium avium complex (MAC) disease	
CD4 count **<50 cells/mm3****	• **Azithromycin 1,200 mg PO once weekly**, or • Clarithromycin 500 mg PO BID, or • Azithromycin 600 mg PO twice weekly

* *SMX-TMP should be used **cautiously** or **avoided** in those with **G6PD deficiency** due to the hemolysis risk. Atovaquone 1,500 mg once daily is an appropriate **alternative**.*

** *Primary prophylaxis is not recommended for those immediately starting ART or those on **fully suppressive** ART. Those who do **not** start ART immediately or who are **not** able to achieve full viral suppression on ART should receive prophylactic therapy.*

Acquired Immunodeficiency Syndrome (AIDS)

The **progression** from HIV to **AIDS** is defined by either:
- A decline in CD4 count to **below** 200 cells/mm3, or
- The onset of OI(s), irrespective of CD4 count

Diagnosis is carried forward lifelong *(even if CD4 count recovers to >200 cells/mm3).*

ART: antiretroviral therapy **BMP:** basic metabolic panel **INSTIs:** integrase strand transfer inhibitors **NRTIs**: nucleoside/nucleotide reverse transcriptase inhibitors **PrEP:** pre-exposure prophylaxis

Last Updated: 6/2025

pyrls

More clinical pearls at pyrls.com