

ANTIRETROVIRAL LAB MONITORING

Laboratory Monitoring Schedule for Patients Before and After Initiation of Antiretroviral Therapy

	Baseline	Prior to initiating	Initiation or modification ^a	Follow-up 2-8 weeks after initiation or modification	Every 3-6 months	Every 6 months	Every 12 months	Treatment failure	Clinically indicated
HIV serology	If diagnosis has not been confirmed								
CD4 count	✓	Every 3-6 months	✓		✓	In clinically stable patients with suppressed viral load, CD4 count can be monitored every 6-12 months.		✓	✓
HIV viral load	✓	Every 3-6 months	✓	✓ ^b	✓ ^c			✓	✓
Resistance testing	✓		✓ ^d					✓	✓
HLA-B*5701 testing			If considering ABC						
Tropism testing			If considering CCR5 antagonist					If considering CCR5 antagonist or CCR5 antagonist-based regimen failed	✓
Hepatitis B serology ^e	✓		May repeat if HBsAg(-) and HBsAb(-) at baseline						✓
Hepatitis C serology with confirmation of positive results	✓								✓
Basic chemistry ^{f,g}	✓	Every 6-12 months	✓	✓	✓				✓
ALT, AST, T. bilirubin	✓	Every 6-12 months	✓	✓	✓				✓
CBC with differential	✓	Every 3-6 months	✓	If on ZDV	✓				✓
Fasting lipid profile	✓	If normal, annually	✓	Consider 4-8 weeks after starting new ART regimen that affects lipids		If abnormal at last measurement	If normal at last measurement		✓
Fasting glucose or hemoglobin A1C	✓	If normal, annually	✓		If abnormal at last measurement	If normal at last measurement			✓
Urinalysis ^h	✓		✓			If on TDF ^h	✓		✓
Pregnancy test			If starting EFV						✓

NOTES

This table pertains to laboratory tests done to select an ARV regimen and monitor for treatment responses or ART toxicities. Please refer to the HIV Primary Care guidelines for guidance on other laboratory tests generally recommended for primary health care maintenance of HIV patients.

- ART may be modified for treatment failure, adverse effects, or regimen simplification.
- If HIV RNA is detectable at 2-8 weeks, repeat every 4-8 weeks until suppression to <200 copies/mL, then every 3-6 months..
- Viral load typically is measured every 3-4 months in patients on ART. However, for adherent patients with suppressed viral load and stable immunologic status for more than 2-3 years, monitoring at 6 month intervals may be considered.
- In ART-naïve patients, if resistance testing was performed at entry into care, repeat testing before initiation of ART is optional. The exception is pregnant women; repeat testing is recommended in this case. For virologically suppressed patients who are switching therapy for toxicity or convenience, viral amplification will not be possible and therefore resistance testing should not be performed. Results from prior resistance testing can be used to help in the construction of a new regimen.
- If HBsAg(+) at baseline or before initiation of ART, TDF plus either FTC or 3TC should be used as part of the ARV regimen to treat both HBV and HIV infections. If HBsAg, and HBsAb, and anti-HBc are negative at baseline, hepatitis B vaccine series should be administered..
- Serum Na, K, HCO₃, Cl, BUN, creatinine, glucose (preferably fasting). Some experts suggest monitoring the phosphorus levels of patients on TDF. Determination of renal function should include estimation of CrCl using Cockcroft-Gault equation or estimation of glomerular filtration rate based on MDRD equation.
- For patients with renal disease, consult the Guidelines for the Management of Chronic Kidney Disease in HIV-Infected Patients: Recommendations of the HIV Medicine Association of the Infectious Diseases Society of America.
- More frequent monitoring may be indicated for patients with evidence of kidney disease (e.g. proteinuria, decreased glomerular dysfunction) or increased risk of renal insufficiency (e.g., patients with diabetes, hypertension).

Acronyms: 3TC = lamivudine, ABC = abacavir, ALT = alanine aminotransferase, ART = antiretroviral therapy, AST = aspartate aminotransferase, CBC = complete blood count, CrCl = creatinine clearance, EFV = efavirenz, FTC = emtricitabine, HBsAb = hepatitis B surface antibody, HBsAg = hepatitis B surface antigen, HBV = hepatitis B virus, MDRD = modification of diet in renal disease (equation), TDF = tenofovir, ZDV = zidovudine

REFERENCES

Adapted from Panel on Antiretroviral Guidelines for Adults and Adolescents. *Guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents*. Department of Health and Human Services. Available at <http://aidsinfo.nih.gov/contentfiles/lvguidelines/AdultandAdolescentGL.pdf>. Section accessed 4/2013 [Table 3].

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