



## **Guidelines for use of laboratory testing in Management of new HIV/AIDS patients**

Administering anti-retroviral therapy requires initial and periodic laboratory investigations to monitor adverse drug reactions and detect treatment failures as soon as possible. The laboratory testing guidelines offered here are adapted from the National ARV Guidelines of the Nigerian FMOH. Guidelines are only offered as support for clinical decision making and can not replace sound clinical judgement. It is assumed that each patient considered for ARV therapy has already been screened for HIV antibodies and a confirmatory test has been performed to establish their diagnosis.

### **PROCEDURES:**

#### **Who and when to test:**

- a. All patients who are potential candidates for ART are to be considered for the tests specified in the pre-treatment (baseline) schedule [see table below].
- b. The frequency of other tests will be as suggested below.
- c. No test is routine; tests should be ordered based on sound clinical judgement of the consulting physician..

#### **Pregnancy Test**

Request at baseline for all females.

#### **VDRL test**

Request at baseline for all patients.

#### **Full blood count (FBC)**

- a. For all patients at baseline and then 6 monthly.
- b. Patients on co-trimoxazole should have white blood cell counts and differentials every 3 months (myelosuppression).
- c. If patient is on zidovudine, FBC should be repeated after a month and then 3 monthly(anaemia).

#### **HIV Viral Load**

Routine viral load testing is not widely available. It is strongly recommended in the following two groups of patients:

- a. Patients who have had a history of prior ARV exposure, either through a private source, GON program or other treatment site should be started on ARV therapy and viral load determined after 2 months
- b. Patients who are clinically and immunologically stable on ARV but there is reason to doubt their adherence to therapy

#### **HIV Genotyping**

- a. Genotyping by sequencing of RT and protease genes of the patient's virus should be considered for virus detectable at above 1000 copies / ml in the two previous groups..

### **CD4+ cell count**

- a. For all patients at baseline and then 3 monthly
- b. Patients with high stable CD4 counts may be monitored less frequently, e.g. every 6 months

### **Serum Urea and Creatinine level**

- a. For all patients at baseline
- b. Should be repeated as indicated by patients clinical condition e.g. suspicion of any renal impairment.
- c. All patients on tenofovir to be repeated 3 monthly.

### **Serum Electrolytes**

#### **Na+ -**

Include as baseline test in all patients

- a. If there is suspicion of lactic acidosis (NRTI Adverse event), request on as needed basis for calculation of anion gap

#### **K+**

Include as baseline test in all patients

- a. If there is a clinical suspicion of lactic acidosis, request on as needed basis for calculation of anion gap
- b. Clinical evidence of dehydration, renal failure etc
- c. All patients on co-trimoxazole every 3 months (hyperkalaemia ).

#### **Cl-**

- a. Include as baseline test in all patients
- b. If there is a clinical evidence of dehydration from diarrhea or for lactic acidosis (NRTI Adverse event), request on as needed basis for calculation of anion gap

#### **Bicarbonate**

- a. If there is a clinical evidence of dehydration from diarrhea or clinical suspicion of acidaemia, request on as needed basis for calculation of anion gap.

### **Hepatitis B surface antigen**

Request at baseline for all patients

### **Liver Function Tests (LFT)**

*Alanine transaminases / Aspartate transaminases (ALT/AST)*

- a. Request as baseline test on all patients
- b. If on nevirapine, repeat at 2<sup>nd</sup> and 4<sup>th</sup> week, thereafter 3 monthly
- c. If on anti-TB medications, repeat LFT monthly if baseline test is abnormal
- d. For other patients, monitor every 6 months unless baseline is abnormal, in which case repeat every 3 months.

#### *Bilirubin*

- a. Request as clinically indicated in those patients with clinical jaundice- fractionated bilirubin.

- b. Request as baseline for patients to be started on atazanavir.

**Amylase**

- a. Only as clinically indicated, especially if patient is on didanosine

**Random Blood sugar (RBS)**

- a. Request as baseline test only in patients with co-morbid history of diabetes mellitus or expected to be on long term protease inhibitors.
- b. if elevated, (>200mg/dl or 11.1mmol/l), repeat at next visit and review symptoms of diabetes mellitus.

**Lipid Profile (TGs, Total cholesterol)**

- a. Request as baseline test for patients on or expected to be on stavudine or long term protease inhibitors.
- b. Repeat in this group annually.

Table. Suggested monitoring schedules for initiating and sustaining ART at ACTION

	<sup>1</sup> Pre-Treatment (Baseline)	3-monthly	6-monthly
<b>Pregnancy Test</b>	X		
<b>Full Blood Counts</b>	X		X
<b>Hepatitis B surface antigen</b>	X		
<b>VDRL</b>	X		
<b>Urea &amp; creatinine</b>	X	The frequency of further tests is as clinically indicated	X
<b>Electrolytes</b>	X	The frequency of further tests is as clinically indicated.	
<b>Liver Function Tests</b>	X	The frequency of further tests is as indicated in guideline	X
<b>CD4 cell counts</b>	X		X
<b>HIV viral load<sup>2</sup></b>	X		X
<b>Chest X-Ray<sup>3</sup></b>		(as required)	
<b>Serum amylase</b>		(as required)	
<b>Serum lipid profile</b>	Baseline and annually on indicated groups		
<b>Random blood sugar</b>	Baseline only on indicated patients (see guidelines)		

<sup>1</sup> Pre-Treatment baseline tests should be done simultaneously.

<sup>2</sup> See above

<sup>3</sup> symptomatic patients  
(see Guidelines above for details)