Basics of Antiretroviral Therapy (ART) & Management of HIV positive patients
Learning Objectives

By the end of the session, participants will:

- Describe the policy updates regarding the management of HIV + patients
- Understand how antiretrovirals (ARVs) work
- List the goals of ART
- Discuss the general benefits and challenges in the use of ARVs.
Learning Objectives (contd.)

- Describe the schedule and side effects associated with first-line ART drugs.
- Explore how Lay Counselors can discuss side effects and management of them with patients.
- List symptoms that should be referred to the physician.
Policy Updates

- Start ART as soon as possible for all HIV infected children and adults, regardless of clinical stage, CD4 count and/or pregnancy status. → TEST AND START

- Routine CD4 counts are no longer supported by the national HIV program.

- All children under 24 months who start ART need a confirmatory DNA-PCR - No follow-up testing using rapid antibody tests
Policy Updates (contd.)

- Give IPT for life to all children and adults who are receiving ART in the 10 high TB burden districts.
- Use of five standard 1st line and five standard 2nd line regimens.
- Provide a new HIV test for all women at maternity who are not already know to be HIV positive.
What is ART (Antiretroviral Therapy)?

- ART is a combination of drugs used to treat patients with HIV. Three types of drugs are combined.
- ART does not completely destroy the virus or cure the disease.
- ART reduces the amount of virus in the body (also called viral load) by stopping it from multiplying.
How does ART work?

- The drugs work by making it difficult for the virus to multiply.

- Different types (classes) of ART drugs work in different ways.

- A combination of several classes of ART drugs should be used to reduce the level of virus in the blood and prevent development of resistance to the medications.

- Standard combinations of drugs are used.
  - First line - Regimens 0 - 6
  - Second line e.g. Regimen 7 - 11
When on ART

- The number of CD4 cells increases.
- The amount of virus in the blood decreases.

Who needs to take ART?

- When ‘**Test and Start**’ is implemented all HIV + individuals will be eligible for ART
ART

- Just like any other drugs ARVs also have side effects and can cause short- and long-term physical problems.

- Patients must take 100 percent of scheduled doses for the drugs to work effectively.

- If ART is not taken properly, the virus may become resistant to the drugs and they will not work (more on drug resistance later).
Five Goals of ART

2. Support and help the immune system.

3. Improve the patient’s quality of life.

1. Decrease the amount of virus in the blood.

4. Reduce HIV-related illnesses and death.

5. Possibly reduce risk of HIV transmission to others.
Goal #1: Decrease the amount of virus in the blood

- The goal is to reduce the amount of virus so it cannot be found in the blood (remember, it’s still there, we just cannot measure it).

- Periodic tests to measure the amount of virus in the blood of ART patients (viral load test) are done.
Goal #2: Support and help the Immune System

- When a patient is on ART, the immune system should get stronger and the CD4 cell count should rise.
- The immune system can then fight infections better.
- A patient should get sick less frequently and his or her sicknesses should be less severe with ART.
- If the patient is already sick with OIs, the infection may be made less severe with ART.
Goal #3: Improve the patient’s quality of life

- Patients often gain weight, are less fatigued, and generally feel better when taking ART.

- Often, they can return to work and to their other usual activities; hope is restored.
Goal #4: Reduce HIV-related illness and death

- Taking ART usually slows or stops the progression of HIV.
- Development of new OIs is unlikely; also, patients are less likely to require hospitalization or to die from AIDS.
- ART has been shown to benefit both adults and children.
Goal #5: Possibly reduce transmission of HIV to others

- People on ART can still transmit the virus to others. However, ART decreases the amount of virus in the blood.
- A person is less likely to transmit HIV to others if he or she has a lower level of virus in the blood.
- ART has been shown to decrease the risk of mother-to-child transmission of HIV.
- Patients must still prevent possible transmission, however (for example, by using condoms).
<table>
<thead>
<tr>
<th>ABBREVIATION</th>
<th>FULL NAME(S)</th>
</tr>
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<tbody>
<tr>
<td>NVP</td>
<td>NEVIRAPINE</td>
</tr>
<tr>
<td>EFV</td>
<td>EFAVIRENZ</td>
</tr>
<tr>
<td>AZT</td>
<td>ZIDOVUDINE</td>
</tr>
<tr>
<td>3TC</td>
<td>LAMIVUDINE</td>
</tr>
<tr>
<td>TDF</td>
<td>TENOFOVIR</td>
</tr>
<tr>
<td>ABC</td>
<td>ABACAVIR</td>
</tr>
<tr>
<td>ATV/r</td>
<td>ATAZANAVIR/RITONAVIR</td>
</tr>
<tr>
<td>LPV/r</td>
<td>LOPINAVIR/RITONAVIR or KALETRA or ALUVIA</td>
</tr>
<tr>
<td>DRV</td>
<td>DARUNAVIR</td>
</tr>
<tr>
<td>ETV</td>
<td>ETRAVIRINE</td>
</tr>
<tr>
<td>RAL</td>
<td>RALTEGRAVIR</td>
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</tbody>
</table>
## 1st Line Regimens

<table>
<thead>
<tr>
<th>Regimen</th>
<th>Starter P</th>
<th>Start Reg.</th>
<th>Regimen/Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>YES</td>
<td>NO</td>
<td>ABC/3TC+NVP, 12hrly</td>
</tr>
<tr>
<td>2</td>
<td>YES</td>
<td>Children</td>
<td>AZT/3TC/NVP, 12hrly</td>
</tr>
<tr>
<td>4</td>
<td>NO</td>
<td>NO</td>
<td>AZT/3TC+EFV, 12 + 24hrly</td>
</tr>
<tr>
<td>5</td>
<td>NO</td>
<td>Adults</td>
<td>TDF/3TC/EFV, 24hrly</td>
</tr>
<tr>
<td>6</td>
<td>YES</td>
<td>NO</td>
<td>TDF/3TC+NVP, 24 + 12hrly</td>
</tr>
</tbody>
</table>
Get familiar with our ARVs!

- Regimens and formulations come in different tins
- Label shows generic drug names and dosage in mg
- Supplier may change for new consignments
- Many look similar – *risk of dispensing the wrong tin*
All medicines can cause side effects. These unwanted effects of medicines can vary from minor (such as nausea) to major (such as liver damage) and be temporary or last a long time.

Most patients do not experience all side effects.

Side effects are a concern because
- they can interfere with drug adherence
- they can lessen quality of life
- they can cause long-term health conditions
They can be life threatening (in rare cases)

If a patient experiences side effects, he or she may not be taking ART drugs appropriately.

Part of lay counselor’s responsibilities include:
- Educating patients about side effects
- Monitoring patients for side effects and referring them to the clinician if necessary
<table>
<thead>
<tr>
<th>ARV</th>
<th>Main side effects / Contraindications</th>
<th>Special indications</th>
</tr>
</thead>
<tbody>
<tr>
<td>NVP</td>
<td>Hepatitis, rash (→ SJS)</td>
<td></td>
</tr>
<tr>
<td>3TC</td>
<td>Uncommon: <em>Nausea, diarrhoea, pancreatitis</em></td>
<td>Active against Hep B</td>
</tr>
<tr>
<td>EFV</td>
<td>Hepatitis, rash, nightmares, confusion, gynaecomastia, not for children &lt;10kg</td>
<td>OK to start with TBT</td>
</tr>
<tr>
<td>AZT</td>
<td>Anaemia, nausea</td>
<td></td>
</tr>
<tr>
<td>TDF</td>
<td>Renal failure, affects growing bones</td>
<td>Active against Hep B</td>
</tr>
<tr>
<td>ABC</td>
<td>Hypersensitivity: mouth ulcers, fever, cough, rash (→ SJS)</td>
<td></td>
</tr>
<tr>
<td>LPV/r</td>
<td>Diarrhea, nausea, lipodystrophy., lactic acidosis</td>
<td></td>
</tr>
<tr>
<td>ATV/r</td>
<td>Hyperbilirubinaemia (jaundice)</td>
<td></td>
</tr>
</tbody>
</table>
Teaching patients about side effects

- **Remember:** Adherence increases when the patient knows what to expect and how to manage any side effects.
- Teach the patient about potential side effects before he or she starts ART.
- Continue to teach about side effects after the patient starts ART.
- Instruct the patient and family how to manage minor side effects and how to recognize when they need to seek medical attention.
Teaching patients about side effects (contd.)

Messages for patients:

- They usually become less intense or go away as the body gets used to ART; it may take up to six weeks, but it could take longer.
- There are ways to manage side effects at home, but some should be reported to the clinic.
- Patients should report any new side effects at each clinic visit and each meeting with their ART provider.
- Patients should not stop taking ART, even if they experience side effects.
Symptoms for referral to the clinician

- Difficulty breathing
- Abdominal pain
- Red rash that is intensifying and that may occur with fever, blistering, and mucous membrane involvement (eyes, mouth)
- Persistent vomiting (lasting two to three days)
Symptoms for referral to the clinician (contd.)

- Persistent diarrhea (lasting two to three days)
- Moderate to severe numbness/tingling/burning in hands and feet
- Severe headache with neck stiffness
- Thoughts of suicide or increasing depression
- Seizure
Key Messages

- New guidelines call for putting all HIV + patients on ART immediately
- ART requires combining 3 different ARVs that act differently in order to avoid development of drug-resistant HIV
- It’s important to inform patients about potential side effects