



Safely and Effectively Introducing Antiretroviral Drugs for HIV/AIDS



Introducing antiretroviral drugs into HIV clinical care has made HIV infection a more manageable chronic illness with restored economic productivity and social functioning. But these outcomes have been seen only in settings where resources are available to make the drugs affordable and health service capacity exists to optimize their sustained, safe and effective use. Achieving these outcomes is based on requirements in three areas: 1) the drugs themselves, 2) the client and 3) the health system. People living with HIV/AIDS (PLHA) play a crucial role in designing and implementing antiretroviral therapy (ART) as part of HIV/AIDS prevention and care programs.

The good news is that ART is greatly improving the quality of life of many more PLHA. All efforts must be made to ensure that patients can adhere to the drugs and health systems can accommodate these new interventions.

Antiretroviral drugs (ARVs)

Combining at least three drugs from the various classes of antiretroviral drugs (ARVs) into a “cocktail” typically produces a dramatic reduction in viral load (the level of virus in the blood) with a resulting arrest in immune damage. This combination is called “Highly Active Antiretroviral Therapy” (HAART). Each class of anti-HIV drugs attacks the virus at a different stage of replication while grows in the human host lymphocyte cell. The common classes of drugs currently on the market are the nucleoside reverse transcriptase inhibitors, such as zidovudine (AZT), lamivudine (3TC) and abacavir; the non-nucleoside reverse transcriptase inhibitors, such as nevirapine and efavirenz; and the protease inhibitors such as indinavir, ritonavir and lopinavir. Their use is influenced by:

- Cost. Even with recent dramatic price reductions, all ARVs are still costly when compared to STD or TB drugs.
- Side effects. Side effects are common and need to be clinically monitored. Side effects may lead to stopping or changing the drug or reducing alcohol intake in case of liver toxicity.
- Drug resistance. Because HIV can easily become resistant to ARVs, drugs from the different classes must be combined in treating patients.
- Drug interactions. Most ARVs interact with other drugs commonly used to treat opportunistic diseases, such as tuberculosis and fungal infections. This requires adjusting the dosage or discontinuing ARVs while taking other medication.
- Schedule and storage requirements. Most of the available ARVs have strict medication schedules or storage requirements, although new drugs and drug combinations are being developed to make them easier to take with fewer side effects. The protease inhibitors, for example, require a very strict time regimen to be effective (e.g., indinavir must be taken every eight hours on an empty stomach). Some (ritonavir, lopinavir) require refrigeration. Others need precautions to avoid severe side effects (indinavir requires drinking at least 1.5 liters of water a day to avoid kidney stones, and efavirenz can cause insomnia with chaotic dreams, requiring it to be taken only at night). Pregnant women should not use efavirenz.
- Lifelong adherence. ARV must be taken all one's life if HIV infection is to be a manageable chronic illness. Benefiting from ARVs requires a lifelong relationship between the client and the health team.

The client on ARV

Lifelong adherence (also called compliance or concurrence) to complex ART is the key to sustaining effectiveness and reducing the chance that HIV will become resistant to ARVs. In general, regimens without protease inhibitors are easier to take. Other regimens require taking medication once or twice a day, and do not require strict timing, an empty stomach or large fluid intake. These issues from the client's perspective should be considered in planning:

- Starting ART requires a lifelong commitment to medication and entails enduring the almost universal initial period of unpleasant side effects. It also requires identifying financial resources to pay for regular medical visits, laboratory tests and treatment. The health care provider and client should discuss the self-discipline and financial burden associated with ART at the start of treatment.

Adherence will be improved if the care provider and pharmacist provide ongoing updates on drug information and counseling.

- Emotional support for clients on ART remains a cornerstone of care. Issues of when, how and to whom to disclose must be carefully planned.
- Because treatment failure is common, clients must receive support to ensure they continue receiving care and referrals to palliation and home care when alternatives to the initial ARV regimen have been exhausted.
- ART may create a false sense of safety among users and result in increased high-risk behavior. Although it is biologically plausible that effective use of ARVs would reduce viral loads in vaginal fluids and semen — and as a result reduce sexual transmission — no studies have demonstrated this at the population level. Services must ensure ongoing counseling about the need to continue protective action and information on the effects of ART for clients and their sexual partners.
- Information and education for communities and society on the realities of ART should also be in place. ARVs are neither a cure nor a preventive tool per se. The media have a key role to play in educating the public. PLHA play an effective role in community education.

The health systems

To optimize the benefits of ART for greatly reduced morbidity, mortality and improved quality of life, the following should be addressed simultaneously:

- Training health teams (doctors, nurses, counselors, pharmacists, laboratory staff) in both the public and private sectors, with regular updates on treatment and care options.
- Developing health monitoring modalities and interdisciplinary services to ensure clinical management of HIV as a chronic disease.
- Reorganizing services to integrate HIV care in outpatient departments and at health centers to allow for space, privacy, time and linkages with TB-DOTS and STI programs.
- Strengthening rapid registration of new drugs and drug procurement and management systems to ensure the drugs are always available and to avoid pilferage and misuse.
- Expanding and integrating quality VCT into health systems as an entry point to prevention and care.
- Strengthening and upgrading laboratory facilities. Although viral load measurements may not be essential for safe and effective use, CD4 counts (or cheaper alternatives) are needed to help providers and clients decide together when to start, switch or stop treatment. Laboratory monitoring for potential side effects must be in place.
- Communicating to the public at large the benefits and risks of ART.
- Strengthening and scaling up comprehensive care programs (managing opportunistic infections, preventive therapies, TB-DOTS, home care, palliative care, social support) to accommodate ARV use and to continue caring for those patients not receiving ART.
- Strengthening prevention programs to link closely with care and ARV treatment programs and reinforce the need for prevention as a primary goal within and beyond the health sector.



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