

Strategies for antiretroviral therapy in developing countries the Indian Model

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In 2000 HIV overtook tuberculosis as the world's leading infectious cause of death. The virus is believed to have infected at least 4 million individuals in India and over 6 million in Asia. The social and economic impact of the disease has been particularly severe in developing countries. At the same time HIV-related mortality and morbidity has significantly dropped in affluent countries as a result of widespread use of highly active antiretroviral therapy (HAART). Clearly, use of HAART suppresses viral replication to undetectable levels in a significant majority of patients, decreases the development of opportunistic infections, reduces hospitalizations and extends life. In addition recent data suggests that that HAART may also reduce the risk of HIV transmission due to a decrease in the viral loads, although it is not eliminated. Treatment of HIV-infected patients is crucial for optimal prevention strategies.

The most commonly used triple regimens used includes 2 nucleoside analogues with one non-nucleoside reverse transcriptase inhibitor or one protease inhibitor. Recently a 3 NRTI combination is also being recommended for use although in patients with advanced disease and high viral loads it has been shown to be less effective. Since most regimens have now shown to be equally effective in viral suppression, the initial choice of the regimen is depends on several factors such as affordability, adverse effects, drug availability, availability of drug combinations that can improve compliance, etc. In India currently at least 10 antiretrovirals are now available for adults and three in pediatric formulations. The most economical combinations are these are those containing stavudine or zidovudine with lamivudine and nevirapine. Recent data from India has suggested that based on symptomatology and CD4+ counts these combinations are effective as initial therapy in India with acceptable tolerability. In general NNRTI-based therapy (using nevirapine or efavirenz) is cheaper that PI based therapy and is better tolerated in the long term. The availability of 2 NRTIs (stavudine or zidovudine with lamivudine) and one NNRTI (nevirapine) in a single tablet is further expected to improve patient adherence, which is an important factor in influencing success of therapy. In spite of all this it is estimated that not more than 5%-10% of patients are receiving optimal anti-retroviral therapy. The Companies that produce essential brand names play a vital role in increasing access of ART in developing countries. Expanding the use of antiretroviral therapy in developing countries through greater awareness among physicians and patients, increasing physician training, improving laboratory infrastructure for monitoring of patients and providing adequate counseling services are key strategies in the treatment of HIV-infected patients.