



## **Antiretroviral Treatment**

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The development of antiretroviral therapy (ART) has been one of the most important facts in the history of medicine. ART is the main type of treatment for HIV or AIDS. It is important to understand that it is not a cure; however it has changed the progression of HIV disease.

There are a variety of formulations of antiretrovirals designed to act on different stages of the life-cycle of HIV. The main groups of anti-HIV drugs are: Nucleoside/Nucleotide Reverse Transcriptase Inhibitors, Non-Nucleoside Reverse Transcriptase Inhibitors, Protease Inhibitors and Fusion or Entry Inhibitors. Nucleosides analogs were the first class of ART developed, in the end of the 80s. But the survival improved significantly only in the mid 90s, when physicians started to use combination therapy with two or more drugs. The reason why this combination, called cocktail, is more effective than the use of on single drug is because the HIV mutates rapidly, which makes it extremely proficient at developing drug-resistance. Over 20 drug products have now been licensed, including formulations of both individual and combined antiretroviral agents.

The indication for antiretroviral therapy is based on the clinical assessment, viral load and CD4+ count. These three factors determine whether therapy should be started or if it can still be postponed. The risk of AIDS must be weighed against the risks of long-term toxicity and viral resistance. It is often particularly difficult to people from other cultures to understand that not every person with an HIV infection needs immediate therapy. On the other hand, some patients who are afraid of AIDS might be just as afraid of antiretroviral treatment. They think that

when they have to start taking the medications, it's because they are "closer to an end". Obviously this is not true. Other group of patients has the idea that when taking ART, they won't be able to work and will have to go to the hospitals to spend long hours receiving infusions. This is a false concept. Antiretroviral drugs are taken as pills and the patients can have the same life they had before starting ART.

When the antiretroviral drugs have to be changed? It's a common situation that occurs in roughly 50% of patients in the first year and there are three main reasons for it: acute side effects (such as severe diarrhea, polyneuropathy, severe anemia, pancreatitis, among others), viral treatment failure and long-term toxicity.

Although the introduction of antiretroviral drugs (ART) transformed the treatment of HIV and AIDS, prolonging the lives of many infected people, the cost remains an obstacle to access in the developing world. According to UNAIDS, in 2006, there were 39.5 million people infected with HIV in the world, the great majority of them are living in low income countries. Only a very small proportion of these patients are taking ART. Effective HIV/AIDS care requires ART as an option. If people who live with HIV/AIDS does not have access to antiretroviral therapy, their life expectancy will be too short.