NEW ANTI RETROVIRAL DRUGS IN HIV THERAPY

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The first effective therapy against HIV was the nucleoside reverse transcriptase inhibitor (NRTI) zidovudine (AZT). The New England Journal of Medicine by Hammer and colleagues and Gulick and investigators illustrating the substantial benefit of combining 2 NRTIs with a new class of anti-retrovirals, protease inhibitors, namely indinavir. This concept of 3- therapy was quickly incorporated into clinical practice and rapidly showed impressive benefit with drug 60% to 80% decline in rates of AIDS, death, and hospitalization.

[Entry inhibitors](https://en.wikipedia.org/wiki/Entry_inhibitors), [Nucleoside reverse transcriptase inhibitors (NRTI) and nucleotide reverse transcriptase inhibitors (NtRTI)](https://en.wikipedia.org/wiki/Reverse_transcriptase_inhibitor) are [nucleoside](https://en.wikipedia.org/wiki/Nucleoside) and [nucleotide](https://en.wikipedia.org/wiki/Nucleotide) [analogues](https://en.wikipedia.org/wiki/Structural_analog), [Non-Nucleoside reverse transcriptase inhibitors (NNRTI)](https://en.wikipedia.org/wiki/Reverse_transcriptase_inhibitor), [Integrase inhibitors](https://en.wikipedia.org/wiki/Integrase_inhibitor), [Protease inhibitors](https://en.wikipedia.org/wiki/Protease_inhibitor_%28pharmacology%29) are the known groups of drugs till now.

 In recent years, drug companies have worked together to combine these complex regimens into simpler formulas, termed [fixed-dose combinations](https://en.wikipedia.org/wiki/Fixed_dose_combination_%28antiretroviral%29). For instance, there are now several options that combine 3 drugs into one pill taken once daily. This greatly increases the ease with which they can be taken, which in turn increases the consistency with which medication is taken  and thus their effectiveness over the long-term. Not taking anti-retrovirals regularly is a cause of resistance development in people who have started taking them previously but now patients who take medications regularly can stay on one regimen without developing resistance. This greatly increases life expectancy and leaves more drugs available to the individual should the need arise. There is a consensus among experts that, once initiated, antiretroviral therapy should never be stopped. This is because the selection pressure of incomplete suppression of viral replication in the presence of drug therapy causes the more drug sensitive strains to be selectively inhibited. This allows the drug resistant strains to become dominant. Evotaz (atazanavir + cobicistat) January 29, 2015, rezcobix (darunavir + cobicistat) January 29, 2015, Dutrebis (lamivudine + raltegravir) February 6, 2015, Genvoya(elvitegravir + cobicistat + emtricitabine + tenofovir), alafenamide fumarate (November 5, 2015).

In conclution, as the WHO HIV treatment guidelines state the ARV regimens now available, even in the poorest countries, are safer, simpler, more efficacious and more affordable than ever before and should not be stopped once started to the patient. Hope drugs which can cause full potential treatment on the virus will be very soon.