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Editorial

Antiretroviral Drugs

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DESCRIPTION

There are six main types ('classes') of antiretroviral drugs. Each class of drug attacks HIV during a different way. Generally, drugs from two (or sometimes three) classes are combined to make sure a strong attack on HIV. Most of the people start HIV treatment on two drugs from the nucleoside/nucleotide polymerase inhibitors class combined with either one integrase inhibitor, one non-nucleoside polymerase inhibitor, or one PI hence, 'triple therapy'.

Nucleoside polymerase inhibitors (NRTIs), and nucleotide polymerase inhibitors is the class of medicines is usually mentioned because the 'backbone' of a first-line HIV treatment combination. It includes the drugs like Abacavir, Emtricitabine, Lamivudine, Tenofovir disoproxil, Tenofovir alafenamide and Zidovudine.

Non-nucleoside polymerase inhibitors (NNRTIs) also target polymerase, but during a different thanks to NRTIs. NNRTIs interfere with the polymerase enzyme by binding on to it, blocking the reverse transcription process. It includes the drugs like Doravirine, Efavirenz, Etravirine, Nevirapine and Rilpivirine.

Integrase inhibitors target a protein in HIV called integrase which is important for viral replication. Integrase inhibitors stop the virus from inserting itself into the DNA of human cells. It includes the drugs like Bictegravir, Dolutegravir, Elvitegravir and Raltegravir.

Entry inhibitors stop HIV from entering human cells. There are two types: CCR5 inhibitors and fusion inhibitors. So as to enter a number cell, HIV must bind to 2 separate receptors on the cell's surface: the CD4 receptor and a co-receptor (CCR5 or CXCR4).

Once HIV has attached to both, its envelope can fuse with the host cell wall and release viral components into the cell. CCR5 inhibitors prevent HIV from using the CCR5 co-receptor by binding thereto, blocking viral entry. Maraviroc is additionally referred to as Celsentri. A fusion inhibitor (enfuvirtide) is employed just for people that haven't any other treatment options. It works by stopping the fusion of the HIV envelope protein with the helper T cell.

Protease inhibitors (PIs) block the activity of the protease enzyme, which HIV uses to interrupt up large polyproteins into the smaller pieces required for assembly of latest viral particles. While HIV can still replicate within the presence of protease inhibitors, the resulting virions are immature and unable to infect new cells. It includes the drugslike Atazanavir, Darunavir and Lopinavir.

Post-attachment inhibitors bind to the CD4 receptor on T-cells. They prevent the HIV gp120 protein from changing its shape to interact with co-receptors after it engages with the CD4 receptor. One post- attachment inhibitor is out there. Example: Ibalizumab is additionally referred to as Trogarzo.

Antiretroviral makes the liver break down the first drug more slowly, which suggests that it stays within the body for extended times or at higher levels. Without the boosting agent, the prescribed dose of the first drug would be ineffective. Ritonavir is additionally referred to as Norvir. Ritonavir is included within the combination tablet Kaletra. Cobicistat is additionally referred to as Tybost.

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