

## HIV Drug Resistance

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### INTRODUCTION

The ability of HIV to mutate and reproduce itself within the presence of antiretroviral drugs is named HIV drug resistance (HIVDR). The results of HIVDR include treatment failure and further spread of drug resistant HIV. This will compromise the effectiveness of the limited therapeutic options to succeed in the last 90 target (of achieving viral suppression) and further reduce HIV incidence, mortality and morbidity.

### MECHANISM OF HIV DRUG RESISTANCE

Currently, WHO is developing a replacement five-year global action plan for 2017-2021 to support a coordinated international effort to stop, monitor and answer the emergence of HIV drug resistance, and to strengthen country efforts to realize the worldwide HIV targets.

In order for practicing pharmacists to supply effective pharmaceutical look after their HIV-infected patients they need to have an in depth knowledge of the pharmacology of antiretroviral drugs. Since the effectiveness of those agents are often greatly suffering from HIV drug resistance, it's vital that students and practicing pharmacists understand mechanisms of HIV drug resistance, also as factors that contribute to the emergence of resistance and ways to beat it. HIV drug resistance may be a complicated and dynamic topic [1]. New information regarding mechanisms and prevalence of HIV drug resistance is appearing almost daily within the literature. The ever-changing nature of this subject requires that students, practitioners, and school members stay continuously au courant the newest clinical and scientific developments during this area.

Resistance of HIV to antiretroviral drugs is one among the foremost common causes for therapeutic failure in people infected with HIV. Sadly, the emergence of drug-resistant HIV variants may be a common occurrence—even under the simplest of circumstances—given that no antiretroviral drug combination studied as of yet is totally effective in shutting

down viral replication. And there's no shortage of knowledge indicating that the emergence of HIV drug resistance is clearly related to adverse treatment outcomes [2].

Fortunately, the supply of drug-resistance testing has improved the power of clinicians to deal knowledgeably with HIV drug resistance head on. On the research front, drug-resistance testing has enabled investigators to more effectively develop and study both novel and older therapeutics for the sake of tailoring treatment for patients with varying resistance profiles. During this respect, therapy can now be individualized, supported our evolving knowledge of drug resistance, drug-resistance testing, and state-of-the-art treatment approaches.

But if clinicians are to completely appreciate the epidemiology, prognostic tests, and various treatment choices associated with HIV drug resistance, it's important to know the mechanisms by which HIV drug resistance evolves [3]. To elucidate this, and for instance a number of the recent advances elucidating the mechanisms of HIV drug resistance, Dr. François Clavel took stage at PRN's annual holiday dinner in December to supply a basic and not-so-basic overview.

Combinations of antiretroviral drugs have proven remarkably effective in controlling the progression of HIV disease and prolonging survival, but these benefits are often compromised by the event of drug resistance. About 50 percent of patients receiving antiretroviral therapy within the US are estimated to harbor viruses that express resistance to a minimum of one among the available antiretroviral drugs.

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