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Emerging trends in antiretroviral therapy and drug resistance: A perspective on treatment of HIV

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ore than one-quarter of patients receiving combination antiretroviral therapy (ART) in a "real world" setting experienced virological treatment failure over 8 years. Resistance is the naturally occurring response of any microorganism facing the selective pressure of drugs, and HIV does not represent an exception to this rule. This study will highlight the reasons, outcomes and ways to overcome dug resistance problem associated with the ART therapy in the treatment of HIV. In fact, the high level of viral replication and turnover and the lack of a proofreading mechanism of HIV reverse transcriptase lead to the spontaneous generation of a large number of genetically distinct viral quasi species coexisting in the same personTreatment failure often occurs because a patient's strain of HIV has developed resistance to one or more of his/her antiretroviral medications. The sequential use of potent combinations of antiretroviral agents delays and minimizes the occurrence of resistance but is unable to eliminate it. More studies comparing the trends in HIV resistance with the initial ART are urgently needed to determine potential salvage therapies. Some experts have suggested an initial therapy with boosted Protease Inhibitor (PI); as opposed to initial therapy with a Non-Nuceloside Reverse transcriptase Inhibitor (NNRTI), which when it fails will usually have mutations that confer cross resistance to the drugs in this class. Researchers found NNRTI mutations to be more prevalent in patients who are failing ART, which can be very limiting for future therapeutic options. ART optimisation can be done with Genotype Resistance Testing. Widespread use of ART for HIV pre-exposure prevention (PrEP) could lead to an increase in drug resistance if people are not screened to ensure they are really HIV negative before starting preventive therapy. Effective HIV treatment is still fighting for minimizing the costs of therapeutic regimens and minimizing the risks of non-adherence and resistance.

Biography

Dr. Sanjita Das has completed her PhD and M.Pharm in Pharmacology from Birla Institute of Technology. She is the Head of the Department of Pharmacology, Noida Institute of Engineering and Technology, Greater Noida, India. She has published 26 publications in reputed Journals an as serving as an editorial board member of repute. She has worked as a reviewer for many reputed journals. She is guiding six PhD scholars. She is a member of Indian Pharmacology Society, Indian Chemical Society, Indian Pharmaceutical Association, Indian Pharmaceutical Graduates Association, Association of Pharmaceutical Teachers of India, and Indian Technical Society. Now she is involved in exploitation of medicinal values of the traditionally used plant sources and bioavailability studies of different medicinal products.