

TITLE: PATTERNS OF RESISTANCE TO ANTIRETROVIRALS IN PEOPLE LIVING WITH HIV/AIDS (PLHA) IN THE STATE OF MARANHÃO, NORTHEAST / BRAZIL, IN 2017.

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ABSTRACT:

The different patterns of resistance of the human immunodeficiency virus (HIV) to antiretroviral therapy (ART) are a barrier to the adequate treatment and prevention of the spread of the epidemic. Investigating these patterns of viral resistance and determining the most frequent ones in different populations is critically important in combating the HIV-1 pandemic. The present study aims to determine the profile of HIV resistance to the main classes of antiretrovirals (ARVs) in PLHA in the state of Maranhão, Northeast Brazil. One hundred and three HIV-1 pol-sequences were obtained from the database of the Central Laboratory of Public Health of the State of Maranhão (LACEN/MA), Northeast Brazil. Sequencing of the entire protease (PR) and part of the reverse transcriptase (RT), with 1029 base pair fragments, was performed by ViroSeq™ HIV-1 Genotyping System (Abbott Laboratories, US) and TRUGENE® HIV-1 Genotyping Assay (Siemens Diagnostics, US) and analyzed by the ABI PRISM 3100 DNA automated sequencer (Applied Biosystems, US) and the OpenGene® Sequencing System (Siemens Diagnostics, US), respectively. One hundred and three

patients had at least one type of resistance mutation. The mutations were related to 12 different antiretrovirals, of which Efavirenz (EFV) and Nevirapine (NVP) were present in more than 50% of cases (51.5% and 54.4%, respectively). Resistance to Etricitabine (FTC) and to Lamivudine (3TC) was present in almost half of the study PLHA (49.5%). Among the protease inhibitors (PIs), Lopiravir/Ritonavir (LPV/r) had the highest percentage of resistance (16.5%), and Duranavir/Ritonavir (DRV/r) had a low resistance level (0.97%). Therefore, we demonstrated a pattern of high resistance rates for the NRTI and NNRTI classes of ARVs. The data reinforce the importance of resistance surveillance to the main antiretrovirals used in clinical practice, in order to allow a constant investigation of those more effective in suppressing viral load with the aim of reducing morbidity and mortality, in addition to viral transmission.

Keywords: HIV, Drug Resistance Mutations, ART, Genotyping.