Prevalence of genotypic HIV-1 drug resistance in Thailand, 2002

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Abstract

Background: The prices of reverse transcriptase (RT) inhibitors in Thailand have been reduced since December 1, 2001. It is expected that reduction in the price of these inhibitors may influence the drug resistance mutation pattern of HIV-1 among infected people. This study reports the frequency of HIV-1 genetic mutation associated with drug resistance in antiretroviral-treated patients from Thailand.

Methods: Genotypic resistance testing was performed on samples collected in 2002 from 88 HIV-1 infected individuals. Automated DNA sequencing was used to genotype the HIV-1 polymerase gene isolated from patients' plasma.

Results: Resistance to protease inhibitors, nucleoside and non-nucleoside reverse transcriptase inhibitors were found in 10 (12%), 42 (48%) and 19 (21%) patients, respectively. The most common drug resistance mutations in the protease gene were at codon 82 (8%), 90 (7%) and 54 (6%), whereas resistant mutations at codon 215 (45%), 67 (40%), 41 (38%) and 184 (27%) were commonly found in the RT gene. This finding indicates that genotypic resistance to nucleoside reverse transcriptase inhibitors was prevalent in 2002. The frequency of resistant mutations corresponding to non-nucleoside reverse transcriptase inhibitors was three times higher, while resistant mutation corresponding to protease inhibitors was two times lower than those frequencies determined in 2001.

Conclusion: This study shows that the frequencies of RT inhibitor resistance mutations have been increased after the reduction in the price of RT inhibitors since December 2001. We believe that this was an important factor that influenced the mutation patterns of HIV-1 protease and RT genes in Thailand.

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