Delays in switching antiretrovirals after treatment failure

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Deferred modification of antiretroviral regimen following documented treatment failure in Asia: results from the TREAT Asia HIV Observational Database (TAHOD).

Author list:

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What is the problem that led the researchers to conduct this study?
The decision to modify an antiretroviral treatment regimen when treatment failure develops is crucial to prevent the development of drug resistance and preserve future second-line and salvage treatment options. There are few data on antiretroviral changes following treatment failure that can inform management decisions in HIV-infected patients in the Asia and Pacific region, where diagnostic and resistance testing is not routinely available. In addition, there is limited access to effective, new antiretroviral drugs in many developing countries in the region.

Why did the researchers conduct this particular study?
The objective of this study was to examine how frequently doctors changed antiretroviral treatment regimens after documenting treatment failure, and find out what factors influenced when switches were made in patients in the TREAT Asia HIV Observational Database (TAHOD).

Who and what were included in the study?
TAHOD is a collaborative observational cohort study involving 17 participating clinical sites in the Asia-Pacific region. Data are collected on clinical and demographic factors before and after starting antiretroviral treatment, diagnostic and monitoring laboratory tests, and antiretroviral treatment history. TAHOD patients were included in this analysis if they started their first antiretroviral treatment with three or more drugs after 1996.
How was the study done?

Treatment failure was defined using WHO guidelines for antiretroviral therapy for adults and adolescents. These guidelines include definitions according to immunological, virological and clinical status to guide modification of treatment. Modification of antiretroviral treatment following treatment failure was defined as a change (adding, stopping or substituting) in at least one drug in the treatment regimen. Time to treatment modification and predictors of modification were evaluated using various biostatistical methods (i.e., survival analysis, Cox proportional hazards models).

What did the researchers find?

Among 2446 patients who started antiretroviral treatment, 447 were found to have developed treatment failure, with about 8 out of 100 patients failing in the first year on treatment. But only 52 of 100 patients who failed had their treatment changed within a year – the rest of the patients were continued on a failing regimen. Patients who had more advanced HIV disease, and a lower CD4 count and a higher HIV viral load at failure were more likely to have their antiretroviral drugs changed after failure was documented. There was no difference between patients from high- and low-income countries in the numbers of failures, but patients from high-income countries were more likely to change two or more drugs and to change to a protease-inhibitor-containing regimen.

What do these research findings mean? How could they impact HIV prevention and/or care and treatment of people living with HIV in Asia?

Almost half of the patients in this cohort remained on a failing treatment regimen in the first year after documented treatment failure. Delaying changes in treatment regimens is likely to lead to increased development of drug resistance and reduced efficacy of second-line regimens. There is a need to expand the availability of second-line antiretroviral drugs that doctors can switch patients to after failure.

A limitation of this study is that the patients in the TAHOD cohort may not be entirely representative of HIV-infected patients in the Asia-Pacific region. Research in larger groups of patients may help to confirm these results.