ICAAC: Tobacco and Alcohol Could Lower Efavirenz Blood Levels

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Tobacco and alcohol interact negatively with efavirenz (found in Sustiva and Atripla) in people who are genetically predisposed to clear efavirenz out of their blood streams quickly. These results were revealed in a study presented at the 49th Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC) in San Francisco and reported by the National AIDS Treatment Advocacy Project (NATAP).

Researchers have known for a number of years that some people's bodies process efavirenz more quickly than others, and that the difference is often linked to a genetic change in a liver enzyme called CYP2B6.

To determine genetic influence on efavirenz blood levels—known as pharmacokinetics—researchers looked at 37 HIV-positive people with substance abuse histories who were taking a regimen including efavirenz. Nineteen of the study participants had genes that made them rapid metabolizers of efavirenz, 13 were considered intermediate metabolizers and 5 were slow metabolizers. The researchers looked at not only genetic differences in CYP2B6, but also two other liver enzymes, ABCB1 and CYP3A5.

The study's authors found that people who smoked tobacco and who were rapid metabolizers had significantly lower blood levels of efavirenz than rapid metabolizers who did not smoke, as well as slower metabolizers. The same was true for rapid metabolizers who drank alcohol. There was also a trend for such individuals to have lower CD4 counts and higher viral loads than nonsmokers and people who did not drink alcohol.

The authors conclude that both physiologic and behavioral factors might have contributed to the difference in blood levels, and the researchers encourage further study.