

Abacavir and heart attacks

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Latest results presented by investigators at the CROI meeting in February in Boston suggested that treatment with abacavir (also found in the combination pills Kivexa and Trizivir) and ddI (didanosine, Videx) may significantly increase the risk of myocardial infarction, or [heart attack](#) [1] A life-threatening emergency in which the blood supply to the heart is suddenly cut off, causing the heart muscle (myocardium) to die from lack of oxygen..

This information comes from an observational [study](#) [2] A clinical trial is a research study to answer specific questions about vaccines or new therapies or new ways of using known treatments. Clinical trials are used to determine whether new drugs or treatments are both safe and effective. Carefully conducted clinical trials are the fastest and safest way to find treatments that work in people. Trials are in four phases: Phase I tests a new drug or treatment in a small group; Phase II expands the study to a larger group of people; Phase III expands the study to an even larger group of people; and Phase IV takes place after the drug or treatment has been licensed and marketed. of More than 30,000 patients are [enrolled](#) [3] The act of signing up participants into a study. Generally this process involves evaluating a participant with respect to the eligibility criteria of the study and going through the informed consent process. in the DAD [cohort](#) [4] In epidemiology, a group of individuals with some characteristics in common. A cohort study is a special kind of clinical trial which looks at a treatment or treatment strategy in a cohort of people. study and the Investigators who have had up to seven years of follow-up data information collected to see if there was an association between treatment with NRTIs and an increased risk of myocardial infarction. They found that treatment with abacavir within the previous six months increased the risk of myocardial infarction by 90% and that recent treatment with ddI increased the risk of heart attack by 49%. The other NRTIs also had some level of association with MIs but only abacavir and ddI were at levels that were considered significant.

Perhaps the reason these results generated so much interest was in the wording of the statistical analysis. Most people misinterpreted the "90% risk of MI" as meaning that it was almost certain that everyone on abacavir would have a heart attack. What the authors were actually saying was that a 90% increased risk would be similar to nearly a doubling of a persons chance of MI, so if an HIV patient already had a 1 in 200 chance of having an MI this would now be a 1 in 100 chance if they were taking abacavir therapy.

The researchers maintain that their findings are of particular importance to people who already have a high risk of heart disease, and that these two drugs independently compounded added to that risk.

The link between [antiretrovirals](#) [5] A medication or other substance which is active against retroviruses such as HIV. and an increased risk of cardiovascular disease has been established in previous research, but poor diet, lack of exercise, smoking, family history, older age and even being male all contribute to the risk. The DAD study had shown some years ago that there was a small but significant increased risk of MIs for each year on HIV treatments. This was followed by an further analysis of the cohort, suggesting that this increased risk was mainly attributed to increases in [lipid](#) [6] A fat. levels with treatment.

The most recent data, showing the effects of abacavir and ddI on these risks was unexpected, as most clinicians have considered these drugs to have cleaner metabolic effects on lipids. For example, other [randomised](#) [7] A method based on chance by which study participants are assigned to a treatment group. Randomization minimizes the differences among groups by equally distributing people with particular characteristics among all the trial arms. The researchers do not know which treatment is better. From what is known at the time, any one of the treatments chosen could be of benefit to the participant studies had previously shown that abacavir could improve lipodystrophy features associated with AZT or d4T, and that switching from protease inhibitors to abacavir could improve lipid abnormalities.

This study was accepted as a late breaker poster abstract, and was considered to be highly controversial. Many researchers and clinicians questioned the value of the conclusions due to a range of other factors in the study participant profiles, the methodology used, and the fact that this was a cohort study, rather than a true prospective randomised control study. Cohort studies are useful for looking at factors that are associated with events but cannot say whether these factors are actually causing the event.

In other words when considering the findings of this cohort study it is not straightforward, and is difficult to adjust for

confounding factors such as everyone's different cardiovascular risk factors.

Further studies, and analysis of other cohorts such as the SMART cohort are being discussed to continue to explore these findings and conclusions, and certainly most doctors PL has spoken with suggest this data alone should not change current prescribing of the drugs.

Certainly the underlying risk factors already associated with risk of myocardial infarction are going to be critical in patients trying to manage their [clinical](#) [8]Pertaining to or founded on observation and treatment of participants, as distinguished from theoretical or basic science. care as these questions of specific drug involvement continue to be investigated.

At the same conference, numerous abstracts and reports were presented that focussed on the increasing programs of research that are specifically dealing with metabolic complications in HIV, and especially cardiovascular disease. Those risk factors that a patient can reduce with changes to lifestyle and diet are being stressed more and more.

Finally, the authors of this study recommended that patients receiving abacavir or ddl should consult their doctor, and should not stop any drug they are currently using.

Reference

"Do Thymidine Analogues, Abacavir, Didanosine and Lamivudine contribute to the risk of Myocardial Infarction (MI)?: the D:A:D Study" Conference on Retroviruses and Opportunistic Infections Boston February 2008

- [abacavir](#)
- [didanosine \(ddl\)](#)
- [heart disease](#)

Links:

[1] <http://www.napwa.org.au/glossary/term/103>

[2] <http://www.napwa.org.au/glossary/term/89>

[3] <http://www.napwa.org.au/glossary/term/489>

[4] <http://www.napwa.org.au/glossary/term/477>

[5] <http://www.napwa.org.au/glossary/term/122>

[6] <http://www.napwa.org.au/glossary/term/100>

[7] <http://www.napwa.org.au/glossary/term/513>

[8] <http://www.napwa.org.au/glossary/term/475>