The DAD study: a large European database looks at heart attacks

A mostly European database called DAD (the Data collection on Adverse events of anti-HIV Drugs) has enrolled more than 33,000 HIV positive people in an attempt to try to find out more about uncommon side effects. The DAD study is currently ongoing.

Prior analyses of DAD have revealed that there appears to be an increased risk of cardiovascular disease (CVD) in some people who have used protease inhibitors. DAD has accumulated enough data and monitored the health of people long enough that it can report clear results about the use of the following drugs and their association with CVD:

- protease inhibitors – indinavir (Crixivan), lopinavir (in Kaletra), nelfinavir (Viracept) and saquinavir (Invirase)
- non-nukes – efavirenz (Sustiva) and nevirapine (Viramune)
- nukes – AZT (zidovudine, Retrovir), d4T (stavudine, Zerit), ddi (didanosine, Videx), ddC, 3TC (lamivudine), abacavir (Ziagen) and tenofovir (Viread)

For the current analysis, DAD monitored at least 33,308 HIV positive participants until February 2008 or until they developed their first heart attack. Of this total, here are the outcomes:

- no heart attack – 32,728 people
- heart attack – 580 people

Roughly 2% of people in the DAD study developed a heart attack. At the time of their heart attack, the average profile of the 580 people was as follows:

- 9% female, 91% male
- age – 49 years
- 75% had higher-than-normal levels of lipids in the blood
- 45% were currently smoking tobacco
- 30% were former smokers
- 17% had diabetes
- 14% had a family history of cardiovascular disease
- 36% used lipid-lowering therapy

**Results**

- Nukes – there was a trend toward an increased risk of heart attack the longer abacavir was used. Similar findings were seen with AZT. DAD researchers reported that exposure to ddi was linked to an increased risk of heart attack.
- Non-nukes – no association with a heart attack was detected
- Protease inhibitors – exposure to indinavir or lopinavir-ritonavir was associated with an increased risk of heart attack. Use of these drugs increased the risk by 13%.

**Caution needed**

Bear in mind that DAD is an observational study and such studies are best at finding associations but cannot prove cause and effect. Also, 20% of people who had a heart attack in the DAD study had had a previous heart attack. What this disclosure by the DAD researchers means for their conclusions is not yet clear. It is possible that the DAD researchers may have inadvertently biased their interpretation of the data by including people in their analysis who had more than one heart attack.
Disclaimer

Decisions about particular medical treatments should always be made in consultation with a qualified medical practitioner knowledgeable about HIV- and hepatitis C-related illness and the treatments in question.

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