# Abacavir and the potential risk of myocardial infarction

The D:A:D Study Group[1] describe results from their international observational cohort of 33 347 HIV-1-infected individuals, which suggest an unexpected increased risk of myocardial infarction associated with abacavir therapy (relative rate 1·9, 95% CI 1·47–2·45; p=0·0001). We summarised data from our HIV data repository, which includes information from 54 clinical trials sponsored by GlaxoSmithKline (GSK) designed for 24 or 48 weeks of combination antiretroviral therapy. Data were assessed from 14 683 HIV-infected patients who received abacavir (n=9639; 7845 person-years) or no abacavir (n=5044; 4653 person-years). Baseline demographic and HIV disease characteristics, including lipids and glucose values, were similar. Incidences of coronary/myocardial events were similar between the groups; no higher risk for these events was identified with respect to abacavir (table). A supporting analysis with the 13 studies designed with an experimental control for abacavir was consistent.

The findings of the D:A:D study were unexpected. Like the D:A:D investigators, we are unaware of a potential biological mechanism that might explain their results. In the summary described here, we did not find a result consistent with that of D:A:D. Analyses of relevant spontaneous reports from the GSK and US Food and Drug Administration adverse event reporting system databases did not identify increased risk of myocardial ischaemic events associated with abacavir. Nonetheless, GSK takes the D:A:D finding seriously and is committed to understanding these data more fully and to communicating openly with treating physicians and regulatory agencies globally. As with all medications, physicians and patients must weigh the risks of HIV disease against the overall benefits and risks of the antiretroviral medicines available.

We are all current employees of GlaxoSmithKline.

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1 D:A:D Study Group. Use of nucleoside reverse transcriptase inhibitors and risk of myocardial infarction in HIV-infected patients enrolled in the D:A:D study: a multi-cohort collaboration. *Lancet* 2008; published online April 2. DOI: 10.1016/S0140-6736(08)60423-7.

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| | Abacavir (n=9639) | | No abacavir (n=5044) | | Relative rate (95% CI) | p |
|---|---|---|---|---|---|---|
| | Number of patients† | Rate per 1000 patient-years (number of events)‡ | Number of patients | Rate per 1000 patient-years (number of events) | | |
| Coronary artery disorders* | 24 (0·25%) | 3·45 (27) | 21 (0·42%) | 5·82 (27) | 0·59 (0·35-1·01) | 0·06 |
| Myocardial infarction | 11 (0·11%) | 2·04 (16) | 7 (0·14%) | 2·36 (11) | 0·86 (0·40-1·86) | 0·71 |

*Includes ischaemic coronary artery events and coronary artery disorders not elsewhere classified. 38 of 54 studies were randomised controlled trials; 13 of these were designed with randomisation to abacavir or non-abacavir control. †Includes only events on initial study regimen. ‡Accounts for all data including treatment switches.

***Table:*** **Coronary artery disorders and myocardial infarction in patients exposed and not exposed to abacavir in GSK clinical trials**