Review: antiplatelet treatment prevents occlusive vascular events in high risk patients


QUESTION: In patients at high risk for occlusive vascular events because of pre-existing disease, how effective is antiplatelet treatment?

Data sources
Studies were identified by searching 5 databases and trial registers of the Cochrane Stroke and Peripheral Vascular Disease groups; handsearching journals, abstracts, and meeting proceedings; scanning reference lists of trials and review articles; and contacting pharmaceutical companies and experts.

Data extraction
Trial coordinators were contacted to obtain details about randomisation, allocation concealment, duration of treatment, and follow up. The primary outcome was a serious vascular event (non-fatal myocardial infarction, non-fatal stroke, or death from a vascular or unknown cause).

Main results
287 trials were included. 197 trials compared antiplatelet treatment with control treatment (195 trials provided vascular event data), and 90 trials compared different antiplatelet regimens (89 trials provided vascular event data). For all high risk patients, antiplatelet treatment led to lower rates of serious vascular events than control treatment (p < 0.001) (table). The rates were also lower for each of 5 high risk categories (p < 0.001) (table) as well as for “other” high risk conditions, including peripheral arterial disease (proportional reduction 23%, 95% CI 15% to 31%). An increased risk for major extracranial bleeding occurred with antiplatelet treatment (odds ratio 1.6, CI 1.4 to 1.8). Among trials comparing different antiplatelet regimens, aspirin was better than no aspirin, and daily doses of 75 to 150 mg were at least as effective as higher doses.

Conclusion
In patients at high risk for occlusive vascular events because of pre-existing disease, antiplatelet treatment reduces the risk for non-fatal myocardial infarction, non-fatal stroke, or death from vascular or unknown causes.

COMMENTARY
The Antithrombotic Trialists’ Collaboration published its first large review in 1994.1 In this 2002 update, all studies available by September 1997 have been added. Some of the current results merely strengthen those in the 1994 meta-analysis. The long-standing dispute between American and European strokeologists about the relative effectiveness of high dose and low dose aspirin2 has finally been resolved: 75 to 150 mg daily is as effective as higher doses in all high risk patient groups.

Much of the new information concerns high risk patient groups that had previously been insufficiently studied. We now know that antiplatelet agents also protect against cardiovascular events in patients with stable angina, intermittent claudication, and atrial fibrillation. Previous documentation concerned improved survival in acute myocardial infarction. Now, it is also well established that antiplatelet drugs have beneficial effects in patients who have unstable angina, undergo coronary angioplasty, or have an acute ischaemic stroke.

This meta-analysis clarifies some issues about the benefits and harm of different antiplatelet agents with different mechanisms of action (aspirin, dipyridamole, clopidogrel, and glycoprotein IIb/IIIa inhibitors). In direct comparisons, although sometimes statistically significant, the differences are small in absolute numbers. For instance, the number needed to treat is about 200/year to prevent one additional cardiovascular event when clopidogrel is compared with aspirin (at a cost that is about 60 times higher). The authors conclude that aspirin, 75 to 150 mg daily, remains the first choice in the long term prevention of cardiovascular events. The net benefits of a combination of 2 different antiplatelet agents are best documented in acute cardiac conditions with exception—