

## Aspirin and the risk of haemorrhagic stroke

### *Key points*

- cardioprotection with low-dose aspirin is associated with a slightly increased risk of haemorrhagic stroke
- this risk is outweighed by the benefits of reducing the risk of myocardial infarction and ischaemic stroke

Low-dose aspirin is routinely used for the prevention of secondary ischaemic cardiovascular events. However, some studies have suggested that this is associated with an increased risk of haemorrhagic stroke. A meta-analysis published in 1998 quantified this risk (1).

The analysis included 16 trials involving a total of over 55,000 participants. The mean dose of aspirin was 273 mg/day (range 75 - 1,500 mg/day) and the mean duration of treatment was 37 months (range 1 - 72 months). A total of 108 haemorrhagic strokes was reported in this population. Overall, the rate of haemorrhagic stroke was 0.26% in those treated with aspirin and 0.12% among controls; for ischaemic stroke, the rates were 1.68% and 2.14% respectively. Aspirin use was associated with an absolute risk reduction in myocardial infarction of 137 events per 10,000 persons (CI<sub>95%</sub> 107 - 167; p<0.001) and a reduction of 39 events per 10,000 (CI<sub>95%</sub> 17 - 61; p<0.001) in ischaemic stroke. However, aspirin treatment was also associated with an absolute increase in the risk of haemorrhagic stroke of 12 events per 10,000 (CI<sub>95%</sub> 5 - 20; p<0.001). This risk did not differ by participant or study design characteristics.

These data suggest that for every 715 people treated (CI<sub>95%</sub> 471 - 1483; p<0.001), aspirin will be associated with one extra haemorrhagic stroke; however, one ischaemic stroke will be prevented for every 335 people treated (CI<sub>95%</sub> 177 - 3,043; p<0.001).

It seems reasonable to conclude that although there is a slight increase in risk of haemorrhagic stroke in patients treated with aspirin, this is outweighed by the reduction in the risk of ischaemic strokes, which are far more numerous, and in the reduction in risk of other ischaemic cardiovascular events.

### *References*

1. He J, Whelton PK, Vu B, Klag MJ. Aspirin and risk of hemorrhagic stroke: a meta-analysis of randomized controlled trials. *J Am Med Assoc* 1998;280:1930-5

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