

Aspirin and similar drugs may be associated with brain microbleeds in older adults

April 13 2009

Individuals who take aspirin or other medications that prevent blood clotting by inhibiting the accumulation of platelets appear more likely to have tiny, asymptomatic areas of bleeding in the brain, according to a report posted online today that will appear in the June print issue of *Archives of Neurology*.

Cerebral microbleeds—small deposits of the iron-storing protein hemosiderin in the brain—may be a sign of cerebral small-vessel disease, according to background information in the article. This condition, common among older adults, occurs when the walls of blood vessels in the brain become weakened. When microbleeds occur in certain brain areas, they may indicate a type of small vessel disease known as cerebral amyloid angiopathy, in which the accumulation of amyloid (a protein often related to Alzheimer's disease) causes degeneration of smooth muscle cells and increases the susceptibility of blood vessels to ruptures and hemorrhages.

Meike W. Vernooij, M.D., and colleagues at Erasmus MC University Medical Center, Rotterdam, the Netherlands, investigated the relationship between cerebral microbleeds and the use of anti-clotting medications in 1,062 individuals without dementia involved in the Rotterdam Scan Study. Participants (average age 69.6) underwent [magnetic resonance imaging](#) examinations in 2005 and 2006. Pharmacy records were used to assess whether any of the individuals took anti-clotting drugs. These included [aspirin](#) and carbasalate calcium—called platelet aggregation inhibitors because they prevent the accumulation of

platelets that form [blood clots](#).

In the years before MRI, 363 (34.2 percent) of the participants had used any anti-clotting drugs, including 245 (23.1 percent) who took platelet aggregation inhibitors (67 taking aspirin and 141 taking carbasalate calcium). Compared with patients who did not use anti-clotting drugs, those who took aspirin or carbasalate calcium were more likely to have cerebral microbleeds visible on MRI. This association was particularly strong among individuals taking these drugs at higher doses, typically used to treat or prevent heart disease. Microbleeds in the frontal lobe were more common among aspirin users than carbasalate calcium users. There was no association between other types of anti-clotting drugs and cerebral microbleeds.

"There is currently major interest in bleeding risks with the use of antithrombotic or thrombolytic treatment in persons who have microbleeds that are apparent on MRI because this may affect treatment in patients with cardiovascular or cerebrovascular disease," the authors write. "The cross-sectional design of our analyses prohibited an investigation of whether persons with cerebral microbleeds are at increased risk for symptomatic hemorrhage [excessive bleeding] when using platelet aggregation inhibitors."

The beneficial effects of anti-clotting drugs for individuals at risk for heart attack and stroke typically outweigh any risks of bleeding, they note. "Nevertheless, it may be that in selected persons (e.g., those with signs of cerebral amyloid angiopathy), this risk-benefit ratio may differ for certain drugs (e.g., aspirin), thus influencing treatment decision," they conclude.

[More information:](#) Arch Neurol.
2009;66[6]:(doi:10.1001/archneurol.2009.42

Source: JAMA and Archives Journals ([news](#) : [web](#))

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