

Occurrence of Venous Thromboembolism in Women Taking Low-Dose Aspirin

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The full report is titled “Effect of Low-Dose Aspirin on the Occurrence of Venous Thromboembolism. A Randomized Trial.” It is in the 16 October 2007 issue of *Annals of Internal Medicine* (volume 147, pages 525-533). The authors are R.J. Glynn, P.M. Ridker, S.Z. Goldhaber, and J.E. Buring.

What is the problem and what is known about it so far?

Blood clots that form in the veins (deep venous thrombosis) are a common and often dangerous problem. The veins in the legs are the usual site of these blood clots. Pieces of the clot can break off and travel through the veins to lodge in the lungs and put strain on the heart or even cause death (pulmonary embolism). Clots that remain in the leg veins can cause leg swelling for the rest of a person’s life. People vary in their tendency to develop blood clots. Blood clots are rare in healthy, active people. They are more common in several groups: people with chronic, disabling disease, such as cancer or heart failure; people who can’t move around because of recent surgery or a fractured bone; and people who have a blood clotting disorder that is inherited and is due to a specific mutation in a gene. People who have had at least 1 occurrence of blood clots are at the highest risk, and they frequently have to take medication (such as heparin or warfarin) to reduce the tendency of their blood to clot. These medications can cause severe bleeding, so only people at the highest risk take them. People at low to moderate risk might benefit from a weaker, safer medication—like aspirin—to reduce clotting.

Why did the researchers do this particular study?

To test the effect of aspirin on deep venous thrombosis and pulmonary embolism.

Who was studied?

39,876 healthy women 45 years of age or older; 26,779 gave a sample of blood for testing for mutations that can increase the risk for clot formation.

How was the study done?

The authors randomly assigned each woman to receive 100 mg of aspirin every other day or an identical placebo (sugar pill). Every year, they sent each woman a survey about whether they were taking the study pills; side effects of the pills; and signs, symptoms, and diagnoses of blood clots. If deep venous thrombosis or pulmonary embolism was suspected, a committee of physicians examined the medical records to make sure the diagnosis was correct.

What did the researchers find?

Aspirin did not affect the frequency of deep venous thrombosis or pulmonary embolism, even in women who had higher rates of blood clots because of gene mutations and other reasons. Aspirin increased the risk for abnormal bleeding (blood in the stool or urine, nosebleeds, and easy bruising) but did not increase the risk for bleeding in the brain.

What were the limitations of the study?

Men did not participate in the study. Because blood clots were infrequent, estimates of the effect of aspirin in groups at extra risk for blood clots were not precise.

What are the implications of the study?

Aspirin does not reduce the risk for blood clots forming in the veins in women with few or no risk factors.

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