

The Cost-Effectiveness of Aspirin, Statins, or Both Drugs in the Primary Prevention of Heart Disease

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The full report is titled “Aspirin, Statins, or Both Drugs for the Primary Prevention of Coronary Heart Disease Events in Men: A Cost–Utility Analysis.” It is in the 7 March 2006 issue of *Annals of Internal Medicine* (volume 144, pages 326–336). The authors are M. Pignone, S. Earnshaw, J.A. Tice, and M.J. Pletcher.

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

Heart attack occurs when blockage develops in the blood vessels that supply the heart muscle. Heart attacks are one of the most common causes of illness and are the leading cause of death in the United States. Certain conditions (“risk factors”) increase a person’s chance of having a heart attack or other cardiovascular event. They include older age, male sex, high blood pressure, diabetes, smoking, high levels of total or low-density lipoprotein (“bad”) cholesterol or low levels of high-density lipoprotein (“good”) cholesterol in the blood, and close relatives who had heart attacks before 60 years of age. Aspirin decreases the chances of a heart attack in people who have had previous heart attacks (secondary prevention) and in people who have risk factors but have not yet had a heart attack (primary prevention). Statins are medications that treat high blood cholesterol levels. Many studies show that statins are effective in the primary and secondary prevention of heart attacks and other cardiovascular events. Although aspirin and statins are each known to be effective in the primary prevention of heart attacks and other cardiovascular events, the cost-effectiveness of using 1 drug, the other, or both drugs together is not known.

Why did the researchers do this particular study?

To compare the costs and benefits of using aspirin, statins, both drugs, or neither drug for the primary prevention of heart attacks and other cardiovascular events in men.

Who was studied?

Instead of studying actual patients, the researchers used computers to simulate what would happen to a group of middle-aged men with no history of heart disease who had various risk factors for experiencing a heart attack in the future.

How was the study done?

The researchers used published information to estimate what might happen (and how much it would cost) if doctors prescribed aspirin, statins, both drugs, or neither drug for middle-aged men. They put these estimates into the computer model and calculated how much longer the men would live with each treatment and how much treatment would cost for each of those additional years.

What did the researchers find?

Compared with no treatment, aspirin therapy saved years of life and costs for middle-aged men whose chance of having a heart attack or related cardiovascular event within the next 10 years was 7.5% (7.5 in 100). The addition of a statin to aspirin therapy became cost-effective if the patient’s risk was 10% (10 out of 100) or greater.

What were the limitations of the study?

This study was a computer simulation. We cannot be sure what the results would be with actual patients. These estimates can be useful, however, because studies of this problem involving actual patients are unlikely to be done soon, if ever. The findings may not apply to women.

What are the implications of the study?

Middle-aged men whose chance of having a heart attack or related cardiovascular event within the next 10 years is 7.5% should consider taking aspirin for primary prevention. Men whose risk is greater than 10% should consider taking both aspirin and a statin. A tool to calculate risk of heart attack is available at www.med-decisions.com.

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