Effectiveness of Colonoscopy to Prevent Death From Colorectal Cancer

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The full report is titled "Association of Colonoscopy and Death From Colorectal Cancer." It is in the 6 January 2009 issue of *Annals of Internal Medicine* (volume 150, pages 1-8). The authors are N.N. Baxter, M.A. Goldwasser, L.F. Paszat, R. Saskin, D.R. Urbach, and L. Rabeneck.

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

Cancer of the colon is one of the most common causes of death from cancer, ranking just behind lung cancer, among the types of cancer that affect men and women. Cancer can begin anywhere in the colon. The right colon begins in the right lower part of the abdomen. It ascends to the right upper part, across to the left upper part (in which it meets the left colon), and descends to the anus (the left colon). Most cancers of the colon begin as polyps—small, slow-growing, mushroom-like growths on the inner surface of the colon. Mutations in the genes that control cell division lead to more rapid growth and eventually invasion into the wall of the colon and beyond. The purpose of colon cancer screening is to detect and remove growths before they invade and spread. Experts recommend several effective screening methods. One is to inspect the entire colon through a flexible tube (colonoscopy), which is the most accurate. Because colonoscopy is the most expensive, inconvenient, and riskiest test, it is important to know whether colonoscopy reduces the chance of dying of colon cancer.

Why did the researchers do this particular study?

To find out whether the rate of death from colon cancer is lower in people who had colonoscopy.

Who was studied?

People with colon cancer that was diagnosed between 1996 and 2001 in Ontario, Canada, and died of colon cancer by 2003 (the case patients). Investigators also studied 5 individuals for each case patient who were similar but had not died of colon cancer by 2003 (the controls).

How was the study done?

The authors measured how often the case patients and controls had colonoscopy. Then they compared the chance of dying of colon cancer after having colonoscopy with the chance of dying of colon cancer if colonoscopy has not been done. The authors did the same calculations separately for cancers arising in the left and right colon.

What did the researchers find?

The chance of dying of colon cancer was lower in people who had colonoscopy, but only if the colon cancer was in the left colon. The chance of dying of colon cancer arising in the right colon was the same in those who had colonoscopy as it was in those who did not.

What are the limitations of the study?

The biggest limitation was the lack of information in the computer records about whether colonoscopy was done to screen people who had no symptoms of colon cancer or to evaluate symptoms that could be caused by colon cancer. Also, people were not randomly assigned to get colonoscopy. Therefore, it is not possible to say that colonoscopy results in a lower death rate from colon cancer.

What are the implications of the study?

The study shows that colonoscopy is not a perfect test for preventing death from colon cancer. It supports recommendations to do colonoscopy to screen for colon cancer, but it also raises concerns that colonoscopy may be less effective for cancer arising in the right colon.