

Men with elevated C-reactive protein levels have a greater risk of colon but not rectal cancer

By Victoria Stern

NEW YORK (Reuters Health)

Men with elevated concentrations of serum C-reactive protein (CRP) may have a higher risk of colon cancer but not rectal cancer, suggests a new report published online July 15 in American Journal of Epidemiology.

These results from the European Prospective Investigation into Cancer and Nutrition (EPIC) study support the hypothesis "that chronic low-grade inflammation is associated with a higher risk of colon carcinogenesis," investigator Dr. Krasimira Aleksandrova, from the German Institute of Human Nutrition, told Reuters Health. "Furthermore our study provides the first evidence that inflammation may be an independent risk factor for colon cancer," he said.

Dr. Aleksandrova and his colleagues also recently conducted a study in the same EPIC population and found that higher levels of vitamin D in the blood protected both men and women from cancers of the colon and rectum. "Our aim is to get a full picture of the factors that may influence the risk of colorectal cancer," Dr. Aleksandrova said.

In this study, Dr. Aleksandrova and his colleagues included 1,096 men and women from the EPIC study who had developed colorectal cancer (696 colon and 400 rectum) and an equal number who had not. Prior to cancer diagnosis, the researchers collected detailed information at baseline on dietary and lifestyle factors as well as concentrations of CRP, a marker of systemic low-grade inflammation.

After adjusting for education, smoking, nutritional factors, body mass index, and waist circumference, the researchers found that participants with serum CRP concentrations above 3.0 mg/L had a 1.36-fold greater risk of developing colon cancer than those with levels below 1.0 mg/L ( $P = 0.01$ ). However, the risk of having rectal cancer did not increase for those with elevated CRP levels (Relative Risk 1.02,  $P = 0.65$ ).

Dr. Aleksandrova suggests that perhaps elevated CRP is associated with a higher risk of colon cancer but not rectal cancer because the colon may be more susceptible to inflammation than the rectum. However, these differences in cancer site risk should be further investigated, he said.

In addition, elevated CRP levels were associated with colon cancer risk in men (RR 1.74,  $P = 0.01$ ) but not in women (RR 1.06,  $P = 0.13$ ).

The association between CRP and increased colon cancer risk was independent of obesity, insulin resistance, dyslipidemia, body mass index, waist circumference, smoking status, alcohol, and red meat intake.

"Thus, preventing chronic inflammation could potentially reduce the risk of getting colon cancer, especially in men," said Dr. Aleksandrova. "However, before clinical implications are discussed, future studies need to establish if CRP can be used as a marker to predict colon cancer risk and what CRP cut-off points indicate what degree of risk."

<http://aje.oxfordjournals.org/cgi/content/abstract/kwq135>

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