Blood test for inflammation may be sign of colon cancer

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A blood test used to determine the level of inflammation in the body may offer some help in assessing colon cancer risk, according to results of a study to be presented by Vanderbilt-Ingram Cancer Center's Gong Yang, M.D., MPH, at the 101st Annual Meeting of the American Association for Cancer Research (AACR).

Yang and colleagues show that levels of C-reactive protein (CRP), a protein produced by the liver in response to inflammation, are increased in women with colon cancer.

Blood tests for CRP are typically used as a non-specific marker for infection and inflammatory conditions. A more sensitive CRP test (hs-CRP) can help determine heart disease risk.

Prior studies suggested an association between elevated CRP levels and colon cancer, which fits with the hypothesis that chronic inflammation increases cancer risk. But due to small population sizes and mixed results of the studies, the relationship between CRP and colon cancer risk remains controversial.

"Although cancer-induced inflammation has been proposed to explain the relationship between elevated CRP levels and cancer risk, this hypothesis has not been well evaluated in previous studies," said Yang, a research associate professor of Medicine. "This study, the largest study thus far on circulating CRP and colorectal cancer risk, allows us to test this hypothesis in a more definitive manner."

Yang and colleagues measured CRP levels in blood samples from women participating in the Shanghai Women's Health Study, a large population-based prospective study of nearly 75,000 Chinese women.

In an analysis of 209 cases of colon cancer and 279 healthy controls, the researchers found that women with CRP levels in the highest quartile (the upper 25 percent) had a 2.5-times greater risk of colon cancer compared with women in the lowest quartile.

To examine if there is a causal relationship between blood CRP levels and colorectal cancer risk, they stratified the samples by the time intervals between blood sample collection and disease diagnosis.

They found that the increased risk was primarily seen in women with high blood CRP levels measured within the three years prior to diagnosis. As the interval between the blood draw and cancer diagnosis increased, the association between CRP levels and risk faded.

Because the increased risk associated was greatest in the first years after CRP measurement, Yang believes that high CRP levels may arise largely from the patient's inflammatory response to cancer. Therefore, high CRP may be more of a "risk marker" (something that is detectable as a result of disease) rather than a "risk factor" (something that predisposes one to disease).

Yang will present the results of this study during a press conference on Monday, April 19 at 1:00 p.m. in room 142 of the Washington D.C. Convention Center, during the AACR annual meeting.

Provided by Vanderbilt University Medical Center