2 Markers Predict Survival Odds in Colon Cancer Patients

One protein was protective, the other not, researchers found

By Amanda Gardner
HealthDay Reporter

THURSDAY, Dec. 11 (HealthDay News) -- Blood levels of two insulin-related proteins are able to predict which patients with colon cancer are most likely to die of their disease, new research suggests.

Insulin ushers blood sugar out of the bloodstream and into cells. The hormone tends to work less efficiently in people who are obese, eat heavily and don't exercise, a condition which can lead to diabetes, heart disease and other conditions.

This may explain why individuals who are obese, eat a "Western-style" diet that is high in fat, and low in fruits and vegetables, and are inactive are more likely to develop colon cancer and to have their tumors recur after surgery.

Conversely, colon cancer patients who eat a diet rich in fruits, vegetables, poultry and fish can significantly lower the risk of their cancer returning.

"This gave us further evidence that really lifestyle factors do seem to play a part in the risk of recurrence. This is another piece of the puzzle," said Dr. Brian M. Wolpin, an attending physician in medical oncology at Dana-Farber Cancer Institute and an instructor of medicine at Harvard Medical School, both in Boston. "Although this study doesn't demonstrate causation, it does start to get at the pathways that might be involved, what proteins might be involved in risk."

Wolpin was lead author of the study, published in the Dec. 5 issue of the *Journal of Clinical Oncology*.

"The magnitude of the benefit for exercise [in preventing recurrences] is on the same order as what we see with chemotherapy," added Dr. John Marshall, chief of hematology/oncology at Georgetown's Lombardi Comprehensive Cancer Center, in Washington, D.C. "This study is trying to find out what the science is behind that. It's not an answer. It's a lead."

Previous studies have shown that women with early breast cancer and high levels of insulin and C-peptide along with metabolic syndrome are more likely to see a recurrence of their disease and to die.

And laboratory studies had shown that insulin spurs growth of colorectal cancer cells, while IGFBP-1 inhibits their growth and spread.

This latest study involved 373 patients with non-metastatic (stage I-III) colorectal cancer diagnosed between 1991 and 2004.

Researchers looked at four proteins known to have a relationship to lifestyle factors, two with a stronger association and two with a lesser association. The two with the stronger association, one harmful (C-peptide) and one protective (IGFBP-1), turned out to be key.

Participants who had the highest levels of circulating IGFBP-1 had about a 50 percent reduced risk of dying, both overall and from colon cancer, compared with those who had the lowest levels of the protein,

Wolpin said.

Meanwhile, those with the highest levels of plasma C-peptide had an 87 percent greater chance of dying overall and a 50 percent greater chance of dying from colon cancer than those with the lowest levels. The difference may be due to the fact that "C-peptide is basically insulin . . . and insulin clearly is correlated with heart disease and other things," Wolpin said.

"It doesn't mean we're going to give you a pill rather than tell you to exercise," Marshall said. "Instead of drug companies doing clinical trials, Nike should do them."

More information

The American Cancer Society has more on risk factors for colon cancer.

SOURCES: John Marshall, M.D., chief, hematology/oncology, Georgetown's Lombardi Comprehensive Cancer Center, Washington, D.C.; Brian M. Wolpin, M.D., instructor, medicine, Harvard Medical School, attending physician, medical oncology, Dana-Farber Cancer Institute, Boston; Dec. 8, 2008, Journal of Clinical Oncology, online