June 25, 2013

In recent years, several studies have analyzed the protective effect of aspirin against the development of colorectal cancer. This week in the June 26, 2013, issue of the Journal of the American Medical Association (JAMA), a new study evaluates the differential effects of aspirin before and after diagnosis of colorectal cancer.

In an accompanying editorial to the article, Boris Pasche, M.D., Ph.D., director in the UAB Division of Hematology and Oncology, comments that the results from this study identify potential biomarkers of response to aspirin administered either preventatively or therapeutically, and they are likely to help tailor the use of aspirin in the prevention and treatment of colorectal cancer.

In the past three decades, fewer people have died from colorectal cancer, yet the disease remains the third most common cause of cancer death in the United States. Early detection of precancerous polyps, new chemotherapy regimens and targeted therapies attribute to the improved outcomes. However, no medications are currently recommended for people at risk for colorectal cancer, and scientists have been increasingly exploring aspirin and its connection to cancer.

In the JAMA study, researchers analyzed tumors from 1,226 patients diagnosed with colorectal cancer for mutations within the *BRAF* gene. When compared to non-aspirin users, aspirin users had a 27 percent lower risk of having tumors with an intact

BRAF
gene. However, aspirin did not decrease the risk of developing tumors harboring a mutated
BRAF
gene. These finding suggest that an intact
BRAF
gene is necessary for aspirin to exert a preventive effect.

“Researchers have gotten to the point where they have found that some colorectal tumors may be resistant to aspirin’s effect, while others maybe especially susceptible,” said Pasche. “We are getting that much closer to dissecting aspirin’s mechanism of action with respect to colorectal cancer development and progression to identify which subtypes of colorectal cancer aspirin most effectively prevents, both before and after diagnosis.”

According to Pasche, additional studies are necessary.

“If validated in future studies, these findings add to the body of evidence that suggest certain patients with colorectal cancer may greatly improve their odds of survival with an aspirin regimen,” he said.

The UAB Comprehensive Cancer Center is among the 41 cancer centers in the nation to meet the stringent criteria for the National Cancer Institute's comprehensive designation. The center is a leader in groundbreaking research and patient care, and in reducing cancer disparities.