

[IMAGE]

Alcohol Consumption Strongly Linked to Risk of Colorectal Cancer

By James P. Meschino, DC, MS

Colorectal cancer is the second most common cancer in females and the third most common cancer in males worldwide. Both genetic and environmental risk factors have been shown to contribute to development of the disease. Some of the environmental risk factors for colorectal cancer appear to include a low-fiber diet, obesity, a sedentary lifestyle, and smoking. Additional evidence suggests suboptimal intake of calcium and vitamin D also may contribute to the risk of colorectal cancer.

Evidence also suggests that most colorectal cancers develop from colorectal adenomas. Cigarette smoking, red and processed meat intake, obesity and physical inactivity have been suggested to be risk factors for colorectal adenoma.

Alcohol intake is one of the primary risk factors for many human cancers, and is strongly associated with cancers of the oral cavity, pharynx, larynx, esophagus, liver, breast, and notably, the colon and rectum. A systematic review with meta-analysis published in 2014 provides an update regarding the association between alcohol consumption and risk of colorectal cancer. The meta-analysis included 23 case-control studies and two cohort studies.

Results showed that "all drinkers were associated with 17% increased risk for colorectal cancer, compared with non-drinkers or occasional alcohol drinkers. The dose-response analysis demonstrated that for drinkers of 10, 25, 50 and 100 g/day of alcohol [for reference, 14 g of pure alcohol is equivalent to a 12-ounce beer, a 5-ounce glass of wine or a shot of distilled spirits / liquor], the estimated relative risks of colorectal adenoma were 1.02 (95% CI 0.89–1.16), 1.06 (95% CI 0.92–1.20), 1.16 (95% CI 1.02–1.33) and 1.61 (95% CI 1.42–1.84) respectively, in comparison with non-/occasional drinkers. The risk increases were consistent in the subgroup analyses of gender and site of adenoma, while it was stronger in European studies than the studies in the U.S. and Asia."

alcohol - Copyright © Stock Photo / Register Mark Alcohol consumption may increase the risk of colorectal cancer via a number of documented mechanisms. Alcohol intake may lead to folic acid deficiency in the

colon and rectum, via folate malabsorption. Folate is required for the synthesis of certain DNA bases and to methylate DNA structure. Marginal deficiencies of folate are known to increase the risk of DNA hypomethylation, DNA mutations and strand breaks, which are shown to increase cancer risk, including colorectal cancer.

In addition, intestinal bacteria, which have high activity of the alcohol dehydrogenase enzyme, could oxidize ethanol in the colon and rectum, and generate a considerable level of acetaldehyde, which is known to initiate and promote cancer via several mechanisms. Alcohol also may inhibit DNA repair enzymes, suppress immune surveillance to tumor, alter the composition of bile acids and induce the expression of liver cytochrome P-450 enzymes, all of which may contribute to adenoma development.

The investigators noted that this was the first study to involve a meta-analysis concerning colorectal adenoma risk and alcohol intake, with an extensive search of literature to identify the published research up to January 2014. The majority of the studies evaluated took account of multiple confounders such as age, dietary factors, drug use, physical activity, etc. And the risks of categories stratified by gender, geographical region and site of adenomas were estimated separately. Traditional meta-analysis by categories of alcohol consumption and dose–response analysis were used to investigate the association. As such, the results of the study linking alcohol to risk of colorectal cancer appear to be consistent and reliable.

The researchers go on to suggest that screening guidelines for colorectal cancer should possibly be adjusted for individuals who have lifestyle and environmental risk factors which place them in a higher risk category, such as smoking, obesity (or higher body mass index), lack of exercise, frequent alcohol consumption, etc.

Early screening for colorectal cancer (colonoscopy) is proven to be a valuable tool to detect early-stage cancerous and precancerous lesions, and as a therapeutic intervention, allows physicians to remove suspicious polyps, preventing their progression to malignant lesions. "The earlier screening of this new subset of 'high-risk individuals' may contribute to earlier detection, and subsequently, reduction of morbidity and mortality from colorectal cancer." Talk to your doctor for more information.

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