Spurious Link of Statins to Reduced Colorectal Cancer Risk

By Lila Abassi — April 27, 2016

For several years now, there has been limited and conflicting data showing a modest, but significant, protective effect conferred upon individuals on statin therapy, with respect to colon cancer. It seems, however, that these data were attributable to an inherent flaw in epidemiological studies that include a non-randomized sample – something called an indication bias.

Researchers from the University of Pennsylvania School of Medicine decided it was time to find out whether it was truly the statin or some other factor, unaccounted for, that was contributing to the supposed benefit of statin use. They queried whether individuals taking cholesterol-lowering medications for elevated levels of serum cholesterol had protection not from the statin, but from their high cholesterol levels.

The research team designed a case-control study which analyzed data from over 10 million patients from the United Kingdom enrolled in the Health Improvement Network (THIN) – a network of primary care practices. They identified 22,163 patients with colon cancer (cases) and 86,539 patients without colon cancer (controls) and compared the levels of serum cholesterol levels between the two groups.

Their results revealed that indeed, there was a decreased risk of colorectal cancer with concomitant statin use. However, when they further investigated the risk difference in individuals who continued statin use to those who discontinued statin therapy, there was no longer an observable difference in colon cancer occurrence. What they did find was that blood cholesterol levels were inversely related to colon cancer risk.
“There appears to be an artificially protective effect of statins,” according to the lead author of the study, Ronac Mamtani, MD, MSCE, assistant professor of Hematology/Oncology from the Perelman School of Medicine at the University of Pennsylvania and the Abramson Cancer Center. “Although the risk of colorectal cancer was lower in statin users versus non-users, when we compared those who continued statin therapy versus those who discontinued the therapy, such that each group shared the same indication for statin therapy, there was no difference in risk.”

The authors point out that if physicians encounter an unexplained drop in serum cholesterol levels in patients, an occult malignancy should not be discounted and ought to be included in a differential diagnosis.

“Together, these data demonstrate a complex association between statins, cholesterol, and colorectal cancer,” added Dr. Mamtani. “While unexplained decreases in blood cholesterol should alert physicians to consider colon cancer as one potential explanation, future studies are needed to determine the utility of blood cholesterol as a marker for early detection of colon cancer.”

In 2014, statins were the fifth most commonly prescribed medication in the United States. According to the American Heart Association and the American College of Cardiology 33 million Americans meet the criteria for statin use, which includes any individual between 40-75 years of age who have been calculated to have a 7.5 percent chance of heart attack or stroke within the next 10 years.

Statins have helped effectively reduce low-density lipoprotein (LDL), or what is commonly referred to as “bad” cholesterol, in addition to reducing deaths attributable to heart disease. Additional beneficial effects include improving the function of the cells lining blood vessels (endothelial cells), stabilizing the pre-existing plaques in blood vessels, decreasing inflammation, and preventing the formation of blood clots (thrombus).