Can an Aspirin A Day Keep Cancer Away?

An article that just came out in the internationally influential medical journal *Lancet* that reviews the results from a series of trials that randomized patients to either a daily aspirin (any dose) vs. no aspirin (placebo or not) for at least a four year period. These studies were all done looking primarily for a difference in vascular/cardiovascular outcomes, but they also provide an opportunity to determine whether daily aspirin is associated with any other potential differences in medical outcomes.

There is certainly a background of research looking at the relationship between inflammation and cancer. There is also relatively recent evidence that daily aspirin reduces long-term risk of colon cancer, but this question hasn’t been addressed well with other cancers.

The trial took the results from over 25,000 patients in these eight randomized studies and found that there were very similar results from one to the next, so the results were pooled. The investigators only looked at rates of fatal cancers of various subtypes, with results obtained from records in death certificates and tumor registries.

There is a lot of information in these, but the clear take-home message was that the results became increasingly apparent with longer follow-up, particularly beyond 5 years and even more prominent in the period from 10 to 20 years out from starting vs. not starting daily aspirin. For a wide range of cancers, including gastrointestinal (GI) and non-GI, including lung, esophageal, and pancreatic cancers, and with trends for several other cancers as well, there was a significant decrease in the proportion of deaths from these cancers out to 20 years.
As you can see in the figure above, this didn’t apply to all cancers (such as hematologic cancers like leukemia and lymphoma), but for some others like prostate cancer, there wasn’t a significant difference, but the trend was in the right direction. About 2/3 of the patients on these trials were men, and there wasn’t enough good information to say much about breast cancer.

One other interesting finding was that the reduction in cancers was far more pronounced for adenocarcinomas than other cancer types, such as squamous tumors of the lung, head/neck, or esophagus.

The trial didn’t see any evidence that a dose higher than 75 mg of aspirin daily was better than a lower dose. It’s worth noting that this meta-analysis specifically excluded trials that gave aspirin less frequently, such as every other day. One trial, the Women’s Health Study, showed no difference in cancer rates for women who received an aspirin every other day compared with women who did not (though there was a nearly significant 22% reduction in lung cancers for recipients of aspirin).

There are certainly limitations to this work. This meta-analysis only looked at rates of death from these cancers, while it would certainly be relevant to know what changes in the frequency of diagnosis of new non-fatal cancers were between the two arms. In fact, one of the reasons that there may not have been differences in prostate or breast cancer or some others is that the majority of these may have been non-fatal and therefore below the ability of this analysis to detect.

This was an observational study, and it’s known that many patients assigned to take a daily aspirin weren’t taking it regularly as time went on, while many of the patients on the control arms may have started taking a daily aspirin later. If anything, though, this would only lead us to underestimate the magnitude of benefit with a daily aspirin.

It’s also worth noting that with the patient population being disproportionately male, it’s possible that these results may not be generalizable to women.

In the commentary that has emerged from this study in various news outlets, there has been a fair amount of caution that this is one study (actually a review of many), not a prospective randomized trial, and that the current official recommendations for cancer prevention don’t include a daily aspirin at this time. It’s fair to note, as well, that this trial doesn’t speak to other competing risks that could be increased, such as from bleeding ulcers or other bleeding complications. It’s also worth noting that showing a reduction in long term risk of cancer deaths in the primary prevention setting (in people who don’t already have cancer) is very different from showing that aspirin is a treatment for someone with a current cancer. And in someone on chemotherapy or with other potential bleeding risks, it would be a mistake to presume that a daily aspirin could only be helpful.

This is certainly an important step, and a powerful finding for a treatment you can buy by the 500-pill bottle for about $15. Should it change how we manage patients today? I wouldn’t want
to comment officially, since I’m biased: I’ve been taking a daily aspirin for the past 8 years or so, primarily for long-term cardiac benefits, even though my own doctor appropriately reminded me that there aren’t data speaking to its benefits in my exact patient population (though he didn’t strongly recommend that I not do it). This just gave me one more reason to feel comfortable with that plan.