Is aspirin effective for primary prevention of colon cancer?

Evidence summary
A systematic review conducted for the US Preventive Services Task Force (USPSTF) addressed the use of aspirin for primary prevention of colorectal carcinomas (CRC) and colorectal adenomas (CRA).

Pooled data from 2 randomized-controlled trials (RCTs) with a total of 61,947 patients showed no decrease in CRC incidence (relative risk [RR]=1.02; 95% confidence interval [CI], 0.84-1.25) with regular aspirin use (325 mg every other day for 5 years or 100 mg every other day for 10 years). Six cohort studies that followed a total of 231,252 patients did report a decrease in CRC incidence over 4 to 10 years (RR=0.78; 95% CI, 0.63-0.97).1

In a pooled analysis evaluating 2 primary prevention RCTs (the British Doctors Aspirin Trial and UK-TIA Aspirin Trial, total N=7588), aspirin was found to reduce the incidence of colorectal cancer (hazard ratio [HR]=0.74; 95% CI, 0.56-0.97; P=0.02 overall; for aspirin given for 5 years or longer, HR=0.63; 95% CI, 0.47-0.85; P=0.002). The effect was significant only at 10 to 14 years of follow-up (0 to 9 years: HR=0.92, 95% CI, 0.56-1.49, P=0.73; 5 to 9 years: HR=1.08, 95% CI, 0.55-2.14, P=0.83; 10 to 14 years: HR=0.51, 95% CI, 0.29-0.90, P=0.02; 15 to 19 years: HR=0.70, 95% CI, 0.43-1.14, P=0.15; ≥20 years: HR=0.90, 95% CI, 0.42-1.95, P=0.79).2

Adverse effects, including stroke, are dose-dependent
The USPSTF review also summarized the harms associated with aspirin use. When aspirin was given for secondary prevention of stroke, the risk of hemorrhagic stroke was dose-dependent, varying from 0.3% to 1.1% (100 mg/d: 0.3%, 95% CI, 0.2%-0.4%; 100-325 mg/d: 0.3%, 95% CI, 0.2%-0.3%; 325 mg/d: 1.1%, 95% CI, 0.7%-1.5%).

Aspirin also was associated with an increased risk of gastrointestinal (GI) symptoms (odds ratio [OR]=1.7; 95% CI, 1.5-1.8), GI bleeding (RR=1.6-2.5), and hospitalization for GI bleeding (OR=1.9; 95% CI, 1.1-3.1). The risks of GI bleeding or perforation were dose-dependent.1

Low-dose aspirin promotes secondary prevention of adenomas
In a Cochrane review evaluating the effects of aspirin on CRA, pooled data from 3 RCTs with a total of 1839 subjects (1322 with a history of CRA and 517 with a history of CRC) showed that aspirin in a daily dose of 81 mg is effective for secondary prevention of sporadic CRA over a 1- to 3-year follow-up period (RR=0.77; 95% CI, 0.61-0.96; number needed to treat=12.5). The outcome measured in these 3 trials was an intermediate clinical finding, CRA, and not the more relevant end point of CRC.3

Aspirin probably shouldn’t be used for routine prevention of colon cancer because of its potential risks.
Recommendations

The USPSTF recommends against routine use of aspirin and nonsteroidal anti-inflammatory drugs to prevent colorectal cancer in people at average risk (grade D recommendation: ineffective or harm outweighs benefits).4

The American Gastroenterological Association (AGA) doesn’t recommend aspirin for primary CRC prevention, but acknowledges a possible role in secondary prevention. Aspirin should be considered for patients with a personal history of CRC, advanced CRA, or a strong family history but no history of peptic ulcer disease or hemorrhagic stroke. The AGA notes that 1 in 100 people taking aspirin for 2 years will develop significant GI bleeding.5

References


