The Effect of Aspirin and NSAID Use on Fecal Occult Blood Testing Results

Kahi CJ, Imperiale TF. Do aspirin and nonsteroidal anti-inflammatory drugs cause false-positive fecal occult blood test results? A prospective study in a cohort of veterans. Am J Med 2004;117:837–41.

Study Overview

Objective. To determine if regular use of aspirin or nonsteroidal anti-inflammatory drugs (NSAIDs) is associated with an increased risk for a false-positive fecal occult blood test (FOBT) result.

Design. Prospective cohort study.

Setting and participants. A single Veterans Affairs Medical Center in Indianapolis, IN. A consecutive sample of patients was considered eligible if they had been referred for a colonoscopy to evaluate a positive FOBT during the study period. Patients with previous colonoscopy within the prior 5 years, hematochezia, any bleeding upper gastrointestinal lesion identified by endoscopy, unevaluated dyspepsia, unsatisfactory colonic preparation precluding full colonoscopy, use of warfarin or an antiplatelet agent, or unclear exposure status were excluded. Testing for fecal occult blood loss was performed at the patient's home using FOBT kits (Hemoccult II, Smith-Kline Diagnostics, Palo Alto, CA) that were mailed or brought back to the hospital for processing. Aspirin or NSAID exposure history was obtained through patient questionnaires and medical record reviews. Individuals reporting using at least 1 daily dose of aspirin or NSAIDs for at least 3 days per week at the time of the stool specimen were defined as regular users. Patients were also required to have taken the medication for at least 1 month prior to testing. Aspirin users were also stratified by dose into 3 groups: 81 to 324 mg/day, 325 to 649 mg/day, and 650 to 1250 mg/day. Any discrepancies between medical record review and patient questionnaires were resolved by review of pharmacy records.

Main outcome measures. The primary outcome was any lesion found on colonoscopy that might explain the positive FOBT result. Findings that were considered likely to explain a positive FOBT were defined as cancer, polyps ≥ 1.0 cm or with villous histology, right-sided vascular lesions, or right-sided colitis. Findings considered unlikely to explain a positive FOBT included diverticulosis, hemorrhoids, polyps < 1.0 cm with no villous histology, or normal findings.

Main results. Of 315 patients undergoing colonoscopy for evaluation of a positive FOBT, 193 were enrolled. The cohort was predominately white (86%) and male (98%) with a mean age of 66 ± 10 years. 95% of patients underwent FOBT as part of routine colon cancer screening. 79% (n = 153) of patients had no finding on colonoscopy to explain the positive FOBT. 77% (n = 135) of patients reported regular use of aspirin or NSAIDs at the time of the FOBT. Aspirin and NSAID users were slightly older (mean age, 67 years versus 64 years; P = 0.04) and were more likely to have coronary artery disease (41% versus 14%; P = 0.001) than nonusers. Otherwise, no significant differences were seen in baseline characteristics between regular aspirin and NSAID users and nonusers. 21% of regular aspirin and NSAID users had findings on colonoscopy to explain the positive FOBT (95% confidence interval [CI], 14%–28%) compared with 19% of nonusers (95% CI, 9%–29%). No relationship between false-positive FOBT results and aspirin dose was found on secondary analysis. After adjusting for age, body mass index, family history of colorectal cancer, and use of proton pump inhibitor or histamine type 2 receptor antagonist, no association between aspirin or NSAID use and colonic findings was found (odds ratio, 0.85 [95% CI, 0.39–1.84]).

Conclusion. Regular use of aspirin and NSAIDs does not appear to be associated with false-positive FOBT results.

Commentary

Routine screening with FOBT has been demonstrated to reduce mortality associated with colorectal cancer [1], and FOBT remains an important option for colorectal cancer screening [2]. Any patient with a positive FOBT result requires colonoscopy to evaluate for the potential etiology of the bleeding. Because colonoscopies can be associated with major complications (albeit rare) and studies have hinted at a workforce shortage of gastroenterologists to perform colonoscopy procedures [3], minimizing false-positive results on FOBT is an important goal. False-positive results on FOBT have been ascribed to the intake of certain foods (eg, red meat) and certain medications (eg, NSAIDs), although little evidence supports this practice [4]. NSAIDs

are currently one of the most prescribed medication classes and an increasing number of patients are using aspirin for its cardioprotective effect. Thus, determining if these medications are risk factors for false-positive results on FOBT could have important implications for clinical practice.

Kahi and Imperiale have attempted to address this question through a prospective cohort study of individuals undergoing colonoscopy for the evaluation of a positive FOBT result. This design improves on earlier studies, which typically limited the number of study participants who actually received a colonoscopy. Even after adjusting for potential confounders, the authors found no difference in the risk of having a colonic finding between recent aspirin and NSAID users and nonusers. One interesting finding of the study was the overall high rate of false-positive FOBT results (~ 80%). The authors note this could have been due to the participants not receiving advice on how to modify their diet to reduce false-positive results on the FOBT. Pignone et al performed a meta-analysis that suggested that diet modification had little impact on false-positive results [4].

Applications for Clinical Practice

Although the majority of patients with positive FOBTs do not have corresponding colonic lesions to explain the positive result, aspirin and NSAID use do not appear to increase the likelihood of obtaining a false-positive result on FOBT. Providers do not need to recommend that their patients avoid these medications while undergoing FOBT.

–Review by Harvey J. Murff, MD, MPH

References

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