Putting an end to the misuse of the fecal occult blood test in diagnostic medicine

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Fecal occult blood tests (FOBTs) have been commercially available since the late 1950s. Based on the peroxidase activity of the heme component, they can detect a minimum of 0.5 mg to 1 mg hemoglobin/g of stool, and can be made more sensitive (level of detection of 0.15 mg hemoglobin/g of stool) by hydrating the sample using the test kit (eg, Hemoccult Sensa, Beckman Coulter Inc, USA). Healthy subjects normally lose <1 mL of blood per day through the gastrointestinal (GI) tract, which can increase up to fivefold with the intake of nonsteroidal anti-inflammatory drugs (1). FOBTs have variable levels of sensitivity, which depend on the test’s characteristics, the sampling method, the number of samples and whether there were any concomitant factors affecting test performance. Most importantly, blood loss can be intermittent or variable, such that FOBTs do not demonstrate consistently positive results in patients with underlying GI malignancies. Nevertheless, FOBTs have the ability to identify an acceptable proportion of the population who have early-stage colorectal cancer or adenoma, and who can, in turn, be amenable to successful treatment, yielding a decrease in colorectal cancer mortality by 15% to 33% in randomized controlled trials (2).

The purpose of a screening test is to identify, in asymptomatic individuals at risk for a given condition, those who have an increased likelihood of that condition; in screening, the pretest probability depends solely on those individuals’ risk factors. The purpose of a diagnostic test is different. The decision to use a test to derive, from a constellation of factors, which depend on the test’s characteristics, the sampling method, the number of samples and whether there were any concomitant factors affecting test performance. Most importantly, blood loss can be intermittent or variable, such that FOBTs do not demonstrate consistently positive results in patients with underlying GI malignancies. Nevertheless, FOBTs have the ability to identify an acceptable proportion of the population who have early-stage colorectal cancer or adenoma, and who can, in turn, be amenable to successful treatment, yielding a decrease in colorectal cancer mortality by 15% to 33% in randomized controlled trials (2).

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To further demonstrate the ineffectiveness of FOBT as a diagnostic test, Van Rijn et al (3) investigated the reasons for ordering an FOBT and the impact of the FOBT result on the subsequent diagnostic workup in 2993 FOBTs ordered in 14 hospitals in the Netherlands over a one-year period. The authors found that FOBTs were ordered because of an overt or obscure GI blood loss have, by definition, and solely because of that clinical presentation, a pretest probability of GI bleeding that is beyond the use of an FOBT. The approach to patients with symptoms suggestive of GI blood loss cannot and should not be influenced by the result of an FOBT; the use of an FOBT under such circumstances is, therefore, inappropriate.

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REFERENCES
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