Although the clinical significance of CK-BB is not now fully understood, reports show that serum CK-BB is found in association with neoplastic disease of the stomach and prostate (12, 13). The recent finding of a higher concentration of CK-BB in medullary serum relative to that of peripheral serum (14) may lead to assays for CK-BB that are useful in the early diagnosis of metastatic disease involving bone. Because of the relatively low concentration of CK-BB in most tissues, a sensitive method that is free of interference must be used to detect its activity in serum. The paper-electrophoretic technique accomplishes this quite well. With a reliable method for identifying the CK-BB isoenzyme, a better appreciation of its clinical significance can be expected.

References


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More on Relative Usefulness of Two Tests for Occult Blood in Stool

To the Editor:

Adlercreutz et al. [Clin. Chem. 24, 756–761 (1978)] have indicated that the new “Fecatest” is a more sensitive detector of occult blood in the stool than “Hemoccult.” However, this does not prove that it is superior to Hemoccult as a screening test for occult blood in actual patients.

This can only be determined after Fecatest has been compared with the 51Cr method in a large number of subjects with carcinomas and ulcers, and in controls with no active bleeding, and has been subjected to the same sort of careful clinical testing as Hemoccult has undergone in large cancer-screening programs.

Although the authors have performed 51Cr erythrocyte studies for comparison, their experimental design is suboptimal in three ways.

First, stools were homogenized before testing, an artificial maneuver not used in clinical practice, which may alter the results.

Second, the use of ulcerative colitis patients is inappropriate. Both Hemoccult and Fecatest are enzymatic assays which determine hemoglobin in the feces by virtue of its pseudoperoxidase activity. As for any enzymatic test, it has to be graded in terms of the concentration of enzyme in the stool, not the total amount excreted per day. Ulcerative colitis patients characteristically are anemic and have diarrhea, thus decreasing the amount of hemoglobin and increasing stool volume. Consequently, ulcerative colitis stools that contain 2.5 to 5.0 mL of whole blood per day probably contain less than the normal upper limit of 2 mg of hemoglobin per gram of stool, at which level Hemoccult is negative—and should be negative. The fact that Fecatest is positive on such stools suggests that its increased sensitivity is detecting normal concentrations of blood in the stool, or possibly even the peroxidase activity of the increased amounts of vegetable matter that pass into the stool in ulcerative colitis patients.

Third, the finding that Hemoccult is negative when the Weber test is positive is meaningless without 51Cr assay for comparison, because one cannot tell whether these results represent false negatives for Hemoccult or false positives for the Weber test.

In Table 3, Fecatest was positive on only seven of the 21 stools with blood loss in excess of 2.4 mL per day. This does not differ from the frequency of positives obtained with Hemoccult in the same range of fecal hemoglobin concentrations (Morris et al., Am. J. Digest. Dis., October 1976). Since the present studies were performed with old supplies of Hemoccult from the early 70’s, which are less sensitive than Hemoccult produced since 1975, the comparisons in the present paper are probably not applicable to the newer Hemoccult preparations tested by Morris et al. in 1976.

The unsubstantiated comment that fecal contamination occurs during handling of the Hemoccult card is untenable. This has never been a problem in my experience, or that of anyone else who has used this product extensively.

Experience with all other tests suggests that an increase in sensitivity may only increase the frequency of false-positive reactions, which is the limiting factor on cost effectiveness in any mass screening program. Until the false-positive rate is determined, Fecatest cannot be recommended as a replacement for Hemoccult.

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The authors of the paper in question respond as follows:

To the Editor:

First, we would like to emphasize that so far we have not yet recommended “Fecatest” for use in large mass screening cancer programs for the very reason that experience with Fecatest in such screening is lacking. The more sensitive Fecatest (as compared to “Hemoccult”) has been designed primarily for use in hospitals where the diet can be carefully controlled. If screening for occult bleeding with Fecatest is done on outpatients or healthy individuals who do not adhere to the diet recommended by the producer and who are taking drugs (especially salicylates), more than 30% of the tests will be positive (unpublished results). We have studied only inpatients on a hospital diet, except for ambulant patients with mild colitis ulcerosa. The hospital diet, and the diet recommended in colitis ulcerosa, contains rather little red meat and vegetables with high peroxidase activity. Therefore, if the diet is carefully controlled Fecatest is also useful for screening outpatients, and significantly more correct positives will be detected than with...