The recommended Danish diagnostic strategy in colorectal cancer

Niels Chr. Bjerregaard

The PhD dissertation was accepted by the Faculty of Health Sciences, University of Aarhus, and defended on November 10, 2006.

Official opponents: Mette Nørgaard, Steffen Bülow, Niels Qvist.

Tutors: Søren Laurberg, Henrik Toft Sørensen, Anders Tøttrup.

Correspondence: Niels Chr. Bjerregaard, Kvædeparken 76, 9500 Hobro, Denmark.

E-mail: NCB.MK@mail.tele.dk

Dan Med Bull 2006;53:466

ABSTRACT

The PhD dissertation is based on studies carried out at the surgical outpatient clinics at Aarhus University Hospital (AUH) and Randers Central Hospital (RCH)

The aim was to assess the diagnostic strategy in symptomatic Danish outpatients 40 years of age or older without defined CRC risk factors recommended by a Danish expert group in 2001*; whether Hemoccult-Sensa test can be an alternative to endoscopy as the initial examination in patients who do not present with rectal bleeding and to assess the value of self-reported symptoms as a tool to distinguish between patients with and without colorectal cancer (CRC).

The studies were observational. Eligible patients were those referred by the general practitioners during a 15–16 months period. Patients completed a questionnaire. Patients with overlooked CRC were identified by follow-up in hospital discharge registries. The Hemoccult Sensa test was performed before endoscopic examination. In assessing symptoms and Hemoccult-Sensa test as diagnostic tools we used the findings at the examinations and follow-up in hospital discharge registries as the reference standard regarding CRC diagnosis.

CRC was diagnosed in 5.3% of the 2361 patients included. Two additional cancers were identified at follow-up. Almost 60% underwent colonoscopy and almost 50% underwent both flexible sigmoidoscopy and colonoscopy. 3.5% discontinued the examination programme. The median diagnostic work-up time was 37 days.

The positive predictive value (PPV) of Hemoccult Sensa was 10% for CRC, 21% for significant neoplasia (CRC and adenoma ≥ 10 mm), 12% for adenomas ≥ 10 mm. The negative predictive value (NPV) of Hemoccult Sensa for CRC was 99%. Sensitivity and specificity of Hemoccult Sensa for CRC were 75% and 79%.

All symptoms had high NPVs (93-97%) for CRC. Highest PPV had dark rectal bleeding (21%) and CRC diagnosed in a first-degree relative over the age of 50 (11%). Dark rectal blood was the strongest predictor of CRC (OR: 7). Other predictors were age 60 years or older; CRC diagnosed in a first-degree relative over the age of 50; change in frequency of bowel movements; male gender; and fresh rectal blood only.

The diagnostic strategy is an acceptable alternative to initial colonoscopy, and misses CRC with low probability. Hemoccult Sensa does not appear to be an acceptable alternative to endoscopy as the initial examination. Self-reported symptoms do not appear to be a useful and accurate tool to distinguish between symptomatic outpatients with and without CRC. A new diagnostic strategy is put forward.

*) Statens Institut for Medicinsk Teknologivurdering. Kræft i tyktarm og endetarm. Diagnostik og screening. Medicinsk Teknologivurdering 2001; 1(3).