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National Board of Health

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– a health technology assessment

Summary

2009

Health Technology Assessment – 2009; 11(1)

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Summary

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Health Technology Assessment – 2009; 11(1)

Health economic analysis of diagnostic strategies for patients with symptoms of colorectal cancer – a health technology assessment; Summary

URL: http://www.dacehta.dk

Key words: health economic analysis, diagnostic, strategies, colorectal cancer

Language: English summary of the full report in Danish

Format: pdf
Version: 1.0
Version date: January 5 2009

Issued by: National Board of Health, Denmark, February 2009

Category: Advisory

Design: National Board of Health and 1508 A/S
Layout: Schultz Grafisk

Elektronisk ISBN: 978-87-7676-871-3
Elektronisk ISSN: 1399-2481

This report should be cited as follows:
Olsen KR, Bjerregaard NC, Ibfelt EH, Laurberg S
Health economic analysis of diagnostic strategies for patients with symptoms of colorectal cancer – a health technology assessment
Copenhagen: National Board of Health, Monitoring & Health Technology Assessment, 2009
Health Technology Assessment – 2009; 11(1)

Series title: Health Technology Assessment – funded projects
Series editorial board: Finn Børlum Kristensen, Mogens Hørder, Stig Ejdrup Andersen
Series Editorial Manager: Stig Ejdrup Andersen

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The English summary can be downloaded at www.dacehta.dk

Summary

Background

In 2001 the Danish Centre for Health Technology Assessment published a study recommending a diagnostic strategy for patients with symptoms of colorectal cancer. The strategy was based on initial, flexible sigmoidoscopy and selective colonoscopy (the strategy is hereafter referred to as selective colonoscopy). The study recommended flexible sigmoidoscopy as first-line examination in all patients. The strategy was implemented – in a slightly modified form – at the Aarhus University Hospital and Randers Central Hospital in early 2002.

The diagnostic strategy has recently been evaluated on the basis of a prospective study of patients referred to the Aarhus University Hospital and Randers Central Hospital for examination. The evaluation showed a low probability of false negative diagnosis (colorectal cancer). It was therefore concluded that the strategy is an acceptable alternative to initial colonoscopy. However, the evaluation also revealed that a substantial proportion of the patients went through several diagnostic procedures, and that both flexible sigmoidoscopy and colonoscopy were performed in 55 % of the patients. In the light of these findings, a proposal for a new strategy with initial colonoscopy was proposed (hereafter referred to as initial colonoscopy).

The purpose of the analysis is to assess the health economic costs of selective colonoscopy versus initial colonoscopy. The main difference between the two strategies is that the diagnostic procedure flexible sigmoidoscopy, which forms part of the selective colonoscopy strategy, is replaced by the initial diagnostic procedure of colonoscopy in the initial colonoscopy strategy. A secondary purpose of the analysis is to assess whether the choice of strategy is shaped by differences in patient discomfort between flexible sigmoidoscopy and colonoscopy, or the risk of complications associated with diagnostic colonoscopy.

Results

The cost analysis demonstrated that even though colonoscopy is a more expensive technique than flexible sigmoidoscopy, *initial colonoscopy* is between DKK 53 less expensive and DKK 90 more expensive per patient than *selective colonoscopy*, depending on the assumptions made regarding time consumption for colonoscopy and flexible sigmoidoscopy, respectively. The total costs per patient constitute DKK 394-1,868 for *selective colonoscopy*, and DKK 341-1,959 for *initial colonoscopy*. A literature survey of the cost and effectiveness of the diagnosis of colorectal cancer was performed to assess if these findings could be validated by other studies.

Two studies on the cost-effectiveness of diagnostic strategies for the diagnosis of colorectal cancer found that colonoscopy was the more expensive strategy, but at the same time also the more beneficial examination. Another study recommended initial rectosigmoidoscopy and colonoscopy with no preference for either method. Finally, a study of patients with negative FOBT (Faecal occult blod test) recommended colonoscopy, while a study of patients without specific symptoms recommended colonoscopy, but with qualifications.

The literature survey on patient discomfort showed that colonoscopy can be performed with limited discomfort/pain, and that it may be described as more »comfortable« than

flexible sigmoidoscopy. Of the three studies that studied embarrassment in connection with the examinations, one found that the patients were the least embarrassed by colonoscopy; one found that the patients were the least embarrassed by flexible sigmoidoscopy; and one found no difference between the methods. In the three studies in which patients were asked about their willingness to undergo re-examinations, two of the three revealed that there was no difference between the two methods of examination, while the third study found that patients who underwent colonoscopy were more willing to undergo re-examination than those who underwent flexible sigmoidoscopy.

A total of five studies were found on the frequency of complications associated with diagnostic colonoscopy. The complications associated with diagnostic colonoscopy were predominantly haemorrhage and perforation. Consequently, the risk of death does not seem sufficiently high to warrant a preference for *selective colonoscopy*. It is noted that the risk of perforation seems to peak in the sigmoid colon and the rectum, which are also passed in flexible sigmoidoscopy.

In general, when reviewing the literature, it seems that the risk of haemorrhage and perforation in connection with diagnostic colonoscopy may be reduced by ensuring that only experienced endoscopists perform colonoscopies. In addition, as flexible sigmoidoscopy is not free of complications, the number of complications in the examined population could be reduced by reducing the total number of flexible sigmoidoscopies performed.

Conclusions and recommendations

Based on the cost analysis we conclude that: 1) there is no significant difference between the costs of the proposed *initial colonoscopy* strategy and the current *selective colonoscopy* strategy; 2) *Initial colonoscopy* entails less discomfort for the patient, partly because analgesics and sedatives are used, but more importantly because more patients avoid double examination; 3) the probability of an increase in complications due to an increase in the number of colonoscopies does not constitute a strong argument against the introduction of *initial colonoscopy*; 4) in the proposed strategy the number of patients who undergo more than one examination is reduced, and, consequently, the costs derived from lost earnings, transport, etc., are expected to decrease; 5) the proposed strategy is substantially less complicated. Compliance with the proposed strategy of *initial colonoscopy* should therefore exceed that of *selective colonoscopy*.

In the light of the analysis outlined above, we recommended that *initial colonoscopy* be adopted as the preferred strategy in substitution for *selective colonoscopy* (initial flexible sigmoidoscopy).

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