

Problems in screening colorectal cancer in the elderly

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Abstract

AIM: To explore the problems in the screening of colorectal carcinoma in the elderly.

METHODS: Three models of colorectal cancer prevention were examined: standard screening, active check-up of suspected cases and summons to have endoscopic check-up for previously diagnosed colorectal polyps. The study was performed among three groups of elderly individuals: Group 1 (167 cases), hospitalized asymptomatic individuals without symptoms in large intestines. Group 2 (612 cases): old individuals at home for the aged, out of which 32 showed symptoms of colon disorders; Group 3 (44 cases): elderly people with diagnosed polyps. As a result of 1788 rectosigmoidoscopies, we identified 61 individuals with polyps, out of which 44 patients were over 65 years old. However, only 9 of these 44 individuals agreed to have the endoscopy performed again.

RESULTS: One cancer and 13 polyps were detected in Group 1, and two polyps in Group 2. However, it should be noted that only eleven individuals from Group 2 agreed to have the endoscopy. In Group 3, there were no relapses of the polyps among the nine individuals who came back for the endoscopy.

CONCLUSION: Poor understanding of the screening procedures is one of the greatest problems in early detection of the cancer in the aged. Paradoxically, the cooperation is better with hospitalized patients, than with "successfully old" persons.

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INTRODUCTION

Incidence of colorectal cancer in the world has increased over the past few decades, which is in turn, the cause for the increased importance of the screening for colorectal carcinoma (CRC). The incidence of colorectal cancer increases with age and doubles every ten years after the age of 40. In USA, the incidence of CRC is 35/100 000 population, thus one from 20 people will suffer from CRC during their life. High incidence of CRC has been recorded in Western European countries, which stands opposed to the numbers from the Far-East countries and Africa where the incidence is low, i.e. Nigeria has the incidence of 3.4/100 000. The average colorectal cancer

age-adjusted death rates in Serbia from 1971 to 1996 were 11.2/100 000 for men, and 8.3/100 000 for women^[1].

Colorectal cancer screening includes fecal occult blood tests (FOBT), sigmoidoscopy, air-contrast *barium enema* examination and colonoscopy. These methods are recommended for persons in moderate risk, but its merits and limitations are still under investigation. Persons at high risk, i.e. family history of hereditary non-polyposis CRC, patients with ulcerous colitis, should be screened by colonoscopy. Screening method can surely have a positive effect on the survival rate of CRC. Since survival rate of CRC correlates to the anatomical spread of tumor, as well as to the surgical treatment at the right time, rectosigmoidoscopy can prevent and disclose the earliest stages of distal colon carcinoma.

Colonoscopy is certainly the "gold standard" for colorectal examination, but it is not most commonly accepted due to costs, bowel preparation, sedation and perforation risks (1/2 000 examinations). It is the most efficient method for detecting adenomas and probably has greater significance in the detection of the advanced tumor than other screening methods.

In carrying out our project on screening rectosigmoidoscopy, we found two kinds of problems. Like in all screening projects, one was the motivation of the participants (both the researchers and especially the subjects). The other problem was related to, what was in the developed countries called the cost/benefit issue, and in the under-developed countries was simply the issue of cost, which was extra high.

In the recent "American Cancer Society Guidelines for the Early Detection of Cancer"^[2], the prevalence of screening procedure in American adult population was 19.0 % for FOBT, and 32.3 % for colonoscopy or sigmoidoscopy. Chinese author Wan J^[3] claimed that multimorbidity was noted in 87 % of the investigated elder cases and the incidence of complication was only 0.05 %.

MATERIALS AND METHODS

Patients

The study was performed among three groups of elderly (from 65 to 80 yr, mean age 74.37) individuals: Group 1 had 167 hospitalized asymptomatic individuals without any symptoms in the large intestine, Group 2 consisted of 612 old individuals at home for the aged, out of which 32 had symptoms of colon disorders and Group 3 consisted of 44 individuals with polyps. Group 3 resulted from 1788 rectosigmoidoscopies, among which 61 individuals with polyps were found. 44 of these individuals were over the age of 65, and only 9 agreed to come back for a check-up of endoscopy.

Endoscopy

In our study, screening rectosigmoidoscopy was used with the purpose of assessing the importance of the rectoscopic examination for the early diagnosis and prevention of colorectal cancer. Rectosigmoidoscopy was performed with OLYMPUS endoscope after colon cleaning which was usually with SENNA.

Grouping

We selected three groups of elderly persons. The first one was the group of asymptomatic individuals (regarding digestive

tract) hospitalized at our institute. The answer to the screening was optimal, however it was difficult to obtain such results in the majority of the old population. The second trial was more selective. We included in our endoscopy proposition only the persons with digestive disorders. This selection was based on and followed the assessment procedure in home for the aged. There was a very low percentage of agreement to the endoscopy. Finally, Group 3 was reselected from the elderly persons with previously diagnosed colon polyps, and invited for a control endoscopy. Only 25 % of the group was available for the control rectosigmoidoscopy.

RESULTS

Three models of colorectal cancer prevention were examined: standard screening, active check-up of suspected cases and summons to endoscopic check-up for previously diagnosed colorectal polyps.

Group 1 consisted of hospitalized asymptomatic persons (without symptoms in large intestines).

The second trial (Group 2) was more selective. We included only the persons with digestive disorders in our endoscopy proposition, after the assessment procedure in home for the aged.

Group 3 consisted of the patients who already had polyps of the *rectum* removed and had never reported for endoscopic follow up although advised to do so. All the subjects were summoned by phone and letter.

Table 1 Data of three groups

Number of investigated cases	Selection criteria	Results
167	Hospitalized asymptomatic	1 cancer and 13 polyps
612 (32 with symptoms of colon disorders), 11 agreed to have the endoscopy	Home for the aged	2 polyps
1788 rectosigmoidoscopies (61 polyps) 44 older than 65 y	With previous diagnosis of colon polyp	0 relapses of polyps
9 agreed on the endoscopy		

DISCUSSION

As colorectal tumor represents a considerable medical problem in the elderly, early detection of adenomatous polyps, as the precursors of intestinal *carcinomas*, is increasingly important and relevant to geriatricians.

The incidence of colorectal cancer increases with age, and approximately half of patients who develop it die from it. The possibility of developing cancer during the lifetime is approximately 5-6 %. Those that belong to the risk groups are more in a position to get this disease. In all cases, however, early diagnosis is decisive.

Sigmoidoscopy studies showed that regarding the possibility of CRC development, people older than 65 years were equaled in the incidence with patients having an *adenoma* of distal colon for more than 90 % CRC cases were diagnosed after the age of 55 and the peak of incidence of sigmoidoscopically discovered *adenomas* was before 70 years old.

The reason for lack of improvement in survival is that in most cases of CRC the disease has already been at an advanced stage by the time of diagnosis. Therefore, the main goal of screening is to discover CRC at the early stage when successful radical treatment is possible. Screening is an examination in asymptomatic individuals for CRC.

The American Cancer Society's (ACS) Colorectal Cancer Advisory Group recommends FOBT once a year for people

older than 50, rectosigmoidoscopy every 5 years, *barium enema* every 5 years and colonoscopy every 10 year^[4].

According to WHO, screening tests must be sensitive, specific, applicable in the asymptomatic population and it must aim at lowering morbidity and mortality rate. Although rectosigmoidoscopy has certain disadvantages (such as being invasive, unpleasant and expensive compared to FOBT), it is more reliable than other screening tests in that it is highly sensitive (no false negative results even for lesions less than 5 mm in diameter) and the lesion can be removed during the screening examination.

In almost all patients with CRC, preceding lesions were asymptomatic *adenoma*. Therefore, it is of great importance to locate and remove *adenoma* before the development of *dysplasia* and the following malignant alterations, which, at the same time, represents secondary prevention of colorectal cancer. This is also obvious in British National Polyp Study from 1993, which showed 90 % decline of CC incidence in a group of 1500 patients who underwent polypectomy and were followed up for 6-8 years^[5].

There are different problems regarding colorectal screening in old age: (1) The problem of performing screening or not seems that consensus was reached that different panel group and association have agreed that the answer was YES^[7-15,17]; (2) Recently there were more references that supported colonoscopy as a choice^[11,12,16,17]; (3) Are there any age limits for the colorectal screening procedure? There were two opposed opinions: No limits, or regarding biological age, and individual limit as consequence of the personal expected survival, on average, 75 to 80 y^[19]; (4) What about national programs, accepted by the national authority supported by health funds? There were no such data^[11]; (5) Regarding cost/benefits ratio, it is rational to invest in screening procedure. Developing countries are between high standards and low economies. With minute financial support, the choice is to modify screening method, to reduce the number of investigated persons, or to quit the program of prevention; (6) It seemed very important to have influence on public opinions regarding screening procedure^[15,16,19].

The authors do not have any doubts about the justification of the screening procedure, so an attempt should be made to find a solution for active prevention. However, in developing countries which have fewer technological and financial options, better choice, and the only choice for prevention must be a less costly one. The relation of cost and benefit is principally dependent on the economic possibilities of a country's health service, within which the priorities of a health system play an especially meaningful role.

Further, the selection of hospitalized patients with other diagnosis is not statistically proper for screening of rectosigmoidoscopy. Hypothetically, optimal way to find patients for screening is to start from the homes for the aged or with the patients with colon symptoms that are treated at their homes. This is the best way to find patients when it is not possible to perform massive screening. Periodical checkup of the patients with polypectomy is necessary.

Judging by the commentary^[6], the idea on a prior questionnaire in active search for persons with high risk of contracting (developing) colon malignome is not recommended. In the same article, the recommendation of USA on compulsory screening of persons over 50 is adjusted to the needs of UK service. If the choice is either screening an insignificantly small population or absolute impossibility of screening or just screening of the high-risk group, including those actively detected after the questionnaire, it is highly probable that the latter solution is the one that should be chosen.

Results of our investigation showed that the main problem in the prevention of cancer was the extent of acceptance of

this method by the elderly patients. Screening methods for hospitalized patients (Group 1) were necessary, since they were already motivated for medical treatment. However, the screening method had the lowest acceptance among the old persons from the homes for the aged. A very small number of patients were going for endoscopic checkups. Those patients usually conducted controls on repeated doctor's invitations.

REFERENCES

- 1 **Gajic-Veljanoski O**, Jarebinski M, Jovicevic-Bekic A, Pekmezovic T. Analysis of mortality in cancer of the large intestine in a cohort group in Serbia from 1971 to 1996. *Srp Arh Celok Lek* 2002; **130**: 173-177
- 2 **Smith RA**, Cokkinides V, von Eschenbach AC, Levin B, Cohen C, Runowicz CD, Sener S. American cancer society guidelines for the early detection of cancer. *CA Cancer J Clin* 2002; **52**: 8-22
- 3 **Wan J**, Zhang ZQ, Zhu C, Wang MW, Zhao DH, Fu YH, Zhang JP, Wang YH, Wu BY. Colonoscopic screening and follow-up for colorectal cancer in the elderly. *World J Gastroenterol* 2002; **8**: 267-269
- 4 **Levin B**, Brooks D, Smith RA, Stone A. Emerging technologies in screening for colorectal cancer: CT colonography, immunochemical fecal occult blood tests, and stool screening using molecular markers. *CA Cancer J Clin* 2003; **53**: 44-55
- 5 **Atkin W**. Implementing screening for colorectal cancer. *BMJ* 1999; **319**: 1212-1213
- 6 **Scholefield JH**. ABC of colorectal cancer Screening. *BMJ* 2000; **321**: 1004-1006
- 7 **Steele RJC**, Parker R, Patnick J, Warner J, Fraser C, Mowat NAG, Wilson J, Alexander FE, Paterson JG. A demonstration pilot trial for colorectal cancer screening in the United Kingdom: a new concept in the introduction of healthcare strategies. *J Med Screen* 2001; **8**: 197-203
- 8 **Martyres R**, St John DJ, Irving FH, Wyman K. Colorectal cancer screening in general practice. A survey of current practice and attitudes in Victoria. *Aust Fam Physician* 1999; **28**: 755-758
- 9 **Lieberman DA**, Weiss DG, Bond JH, Ahnen DJ, Garewal H, Cheffec G. Use of colonoscopy to screen asymptomatic adults for colorectal cancer. Veterans Affairs Cooperative Study Group 380. *N Engl J Med* 2000; **343**: 162-168
- 10 **Rossos PG**, Yeung E. Screening for colorectal cancer in older adults. *Geriatrics aging* 2002; **5**: 16-18 <http://www.geriatricsandaging.com>
- 11 **Anderson J**. Clinical practice guidelines: Review of the recommendations for colorectal screening. *Geriatrics* 2000; **55**: 67-73
- 12 **Sonnenberg A**, Delc F, Inadomi JM. Cost-effectiveness of colonoscopy in screening for colorectal cancer. *Ann Intern Med* 2000; **133**: 573-584
- 13 **O'Connor AM**, Stacey D, Rovner D, Holmes-Rovner M, Tetroe J, Llewellyn-Thomas H, Entwistle V, Rostom A, Fiset V, Barry M, Jones J. Decision aids for people facing health treatment or screening decisions (Cochrane Review). *The Cochrane Library, Issue* 2001. <http://www.medlib.com>
- 14 **Lieberman DA**, Weiss DG, Bond JH. Use of colonoscopy to screen asymptomatic adults for colorectal cancer. *N Engl J Med* 2000; **343**: 162-168
- 15 **Lieberman DA**, Harford WV, Ahnen D J, Provenzale D, Sontag SJ, Schnell TG, Cheffec G, Campbell DR, Durbin TE. One-time screening for colorectal cancer with combined fecal occult-blood testing and examination of the distal colon. *N Engl J Med* 2001; **345**: 555-560
- 16 **Wilson LS**, Lightwood J. Model of estimated rates of colorectal cancer from polyp growth by year of surveillance. *J Med Scr* 2001; **8**: 187-196
- 17 **Mayor S**. Single flexible sigmoidoscopy screening could help prevent colorectal cancer. *BMJ* 2002; **324**: 934
- 18 **Wardle J**, Taylor T, Sutton S, Atkin W. Does publicity about cancer screening raise fear of cancer? Randomised trial of the psychological effect of information about cancer screening. *BMJ* 1999; **319**: 1037-1038
- 19 **Smith RA**, Cokkinides V, Eyre HJ. American Cancer Society. American Cancer Society guidelines for the early detection of cancer, 2003. *CA Cancer J Clin* 2003; **53**: 27-43
- 20 **Early DS**. Colorectal Cancer Screening: An overview of available methods and current recommendations. *South Med J* 1999; **92**: 258-265
- 21 **Frame PS**. Implementing clinical preventive medicine: time to fish or cut bait. *J Am Board Fam Pract* 2000; **13**: 84-85
- 22 **Spencer MP**. Screening colonoscopy. *Medscape Gastroenterol* 2000; **2** <http://www.medscape.com>
- 23 **Slattery ML**, Edwards SL, Ma KN, Friedman GD. Colon cancer screening, lifestyle, and risk of colon cancer. *Cancer Causes Control* 2000; **11**: 555-563
- 24 **Saltzstein SL**, Behling CA. 5- and 10-year survival in cancer patients aged 90 and older: A study of 37,318 patients from SEER. *J Surg Oncol* 2002; **81**: 113-116
- 25 **Huang X**, Zhu HM, Deng CZ, Porro GB, Sangaletti O, Pace F. Gastroesophageal reflux: the features in elderly patients. *World J Gastroenterol* 1999; **5**: 421-423

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