ACTA MEDICA SALINIANA

ORIGINAL PAPERS

COLORECTAL CANCER SCREENING IN TUZLA CANTON: PROJECT AND STRATEGY FOR PATIENTS WITH AVERAGE CANCER RISK

Zlatan Mehmedović[1], Fuad Pašić[1]

ISSN 0350-364X

DOI: 10.5457/783

Zlatan Mehmedovic
Fuad Pasic

ABSTRACT

Background: Screening for colorectal cancer (CRC) can identify premalignant lesions and detect asymptomatic malignant tumors at an early stage that have a better chance of healing, but also longer-term better treatment outcomes. Screening has been shown to reduce mortality from CRC. The aim of this paper is comprehensive education of health care professionals in the Tuzla Canton about this disease, adoption of new guidelines and simpler route from diagnosis to surgical treatment, which ultimately leads to reduced mortality and better outcomes in treatment.

Material and methods: The project included family medicine specialists, surgeons and gastroenterologists, 100 of them. The education project was led by two surgeons, who implemented the guidelines of the American College of Gastroenterology (ACG) 2021, when it comes to screening CRC.

Results: None of the participants offered all correct answers in tests, prior to the training, in both groups of doctors. For a post-educational test, data suggest that there has been a noticeable improvement in the results. In a group of doctors with over 10 years of service, 71 (98.61%) answered correctly all the questions offered and only 1 (1.39%) between 5 and 9 correct answers. For a group of doctors with less than 10 years of service, 26 (92.86%) provided all correct answers and only 2 (7, 14%) between 5 and 9 correct answers.

Conclusion: This project pointed to the necessary education of healthcare professionals in this area, who are involved in early detection programmes for CRC, especially family medicine specialists, surgeons and gastroenterologists.

INTRODUCTION

Screening for colorectal cancer (CRC) can identify premalignant lesions and detect asymptomatic malignant tumors at an early stage that are more likely to heal. Screening has been shown to reduce mortality from CRC [1]. Most colorectal cancers (CRC) occur from adenomatous colon polyps progressing from small (< 8 mm) to large (≥ 8 mm) polyps, then to dysplasia and cancer. Progression from adenoma to cancer is believed to last on average about 10 years [2].

Screening tests for CRC can improve the prognosis of the disease by identifying the early stage of CRC that is easier to treat and has a lower mortality rate than CRC discovered after the development of symptoms. In addition, screening can prevent CRC by detecting and removing premalignant polyps before they advance to CRC [1.3, 4,]. In the multiple strategies recommended for screening according to the main guidelines, the number of prevented deaths from CRC appears to be relatively similar, although the sensitivity and specificity of the different polyp and CRC detection tests differ [5.6]. The cost of various screening tests for CRC vary in a wide range, ranging from a few US dollars for a stool test for occult bleeding to USD 1000 or more for a colonoscopy [7]. Although most cases of CRC occur at the age of 50, starting a screening at the age of 45 balances the benefits of detection and prevention. It is the American College of Gastroenterology Guidelines (ACG) 2021 that also recommend starting a screening at the age of 45 in all adults at average risk [8].

The aim of this paper is to comprehensively educate health care professionals in the Tuzla Canton and understand the evidence, accept new guidelines, and simplify the patient's path to diagnosis, which will ultimately lead to a reduction in colorectal cancer mortality in the Tuzla Canton. Also, the task of this education was to check how familiar the doctors are with the new guidelines of the American College of Gastroenterology.

Affiliations:
[1]Clinic for Surgery, Department of General Abdominal Surgery, University Clinical Center Tuzla

Received:
13.02.2024.

Accepted:
10.05.2024.

Corresponding author:
Zlatan Mehmedovic
Email: zmehmedovic@hotmail.com

Funding: none

Competing interests: none

MATERIAL AND METHODS

The project included family medicine specialists, surgeons and gastroenterologists, 100 of them. The education project was led by two surgeons, who implemented the guidelines of the American College of Gastroenterology (ACG) 2021, when it comes to screening colorectal cancer. The education was conducted with continuous lectures, practical tests and tests organized in Tuzla Canton health centers.

The including criteria were doctors specialist in family medicine, surgeons and gastroenterologists. Excluding criteria were specialties of other fields, as well as residents and secondary ones.

The education was conducted in such a way that the doctors were offered tests with correct answers before and after educationally designed lectures and knowledge transfer. On each test, it was mandatory to indicate the specialty of the doctor and years of service.

The test was made up of 10 questions, concerning the age of patients with an average risk of colorectal cancer that should be covered by the screening programme according to the guidelines of the American College of Gastroenterology. Multiple choice questions offered four answers marked with letters a, b, c and d, only one answer was correct. The results of the pre-and-post lecture test and the effectiveness of education were measured.

Statistical analysis

In addition to the graphic method, the Hi-squared test, contingency tables, were used for analysis. Calculations and diagrams were made in MS Excel.

RESULTS

Structure by specialty

The project covers 100 doctors from three specialties. The data shows an emphasis on the share of family medicine specialists (Table 1) (Figure 1).

Table 1. Number of doctors participating in the project by specialty

Specialty	Number of specialists
Family medicine specialists	75
Gastroenterologists	5
Surgeons	20
Total	100

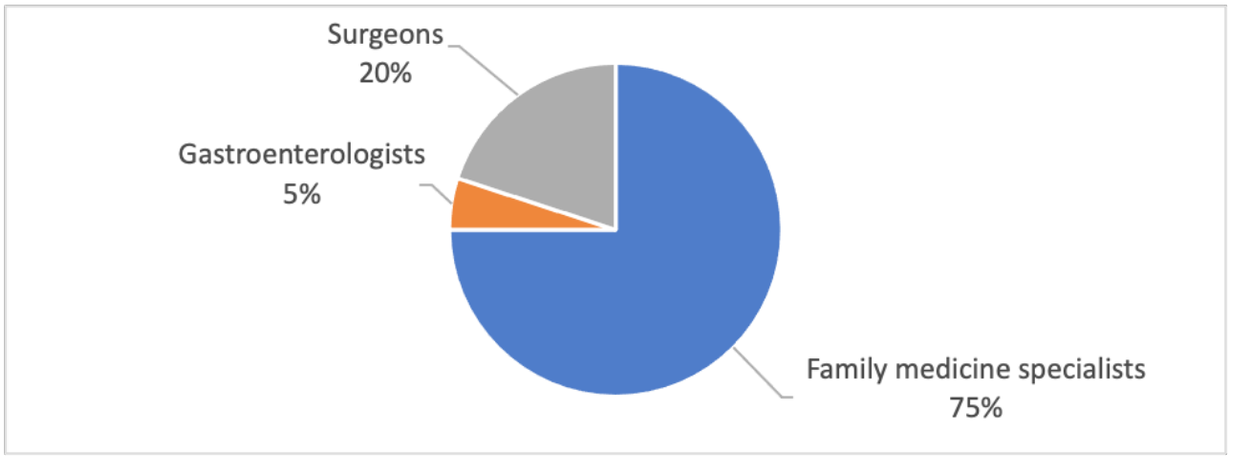

Figure 1: Structure by specialty

Age structure

The group had two subgroups: 72 members with over 10 years of service and 28 members with less than 10 years of service.

Pre-educational test

None of the participants offered all correct answers in tests, in both groups of doctors. In a group of doctors with over 10 years of service, 66 (91.67%) had fewer than 5 correct answers and only 6 (8.33%) between 5 and 9 correct answers. In the case of a group of doctors with less than 10 years of service 27 (96.43%) doctors offered fewer than 5 correct answers and only 1 (3.57%) between 5 and 9 correct answers (Figure 2).

Table 2. Test results prior to education

Before the education			
Number of replies	> 10	< 10	Of everything
All correct	0 (0,00%)	0 (0.00%)	0
5 to 9 corect	6 (8,33%)	1 (3,57%)	7
Less than 5 points	66 (91,67%)	27 (96,43%)	93
Total	72 (100,00%)	28 (100,00%)	100

On Table 2. there is the recapitulation of test results. Doctors with more than 10 years of service are marked with "> 10" and doctors with less than 10 years of service are marked with "< 10".

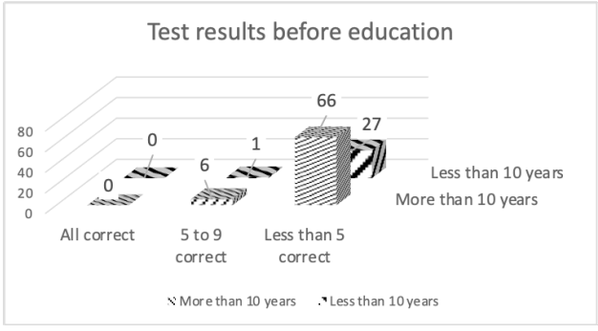

Figure 2: Presentation of the results before training.

The Hi-squared test shows that, in general, there is no statistically significant difference in the test result between the two groups of doctors. In both groups there is an extremely high percentage with less than 5 points. This percentage is higher for doctors with duration of service less than 10 years (96.43%) compared to doctors with duration of service more than 10 years (91.67%).

Post-educational test

For a post-educational test, data suggest that there has been a visual improvement in the results. In a group of doctors with over 10 years of service, 71 (98.61%) answered correctly all the questions offered and only 1 (1.39%) between 5 and 9 correct answers. For a group of doctors with less than 10 years of service, 26 (92.86%) provided all correct answers and only 2 (7, 14%) between 5 and 9 correct answers (Table 3).

Table 3. Post-educational test results

After the education			
Number of replies	> 10	< 10	Of everything
All correct	71 (98,61%)	26 (92,86%)	97
5 to 9 corect	1 (1,39%)	2 (7,14%)	3
Less than 5 points	0 (0,00%)	0 (0,00%)	0
Total	72 (100,00%)	28 (100,00%)	100

There is a recapitulation of test results on the chart. Doctors with more than 10 years of service are marked with "> 10" and doctors with less than 10 years of service are marked with "< 10" (Figure 3).

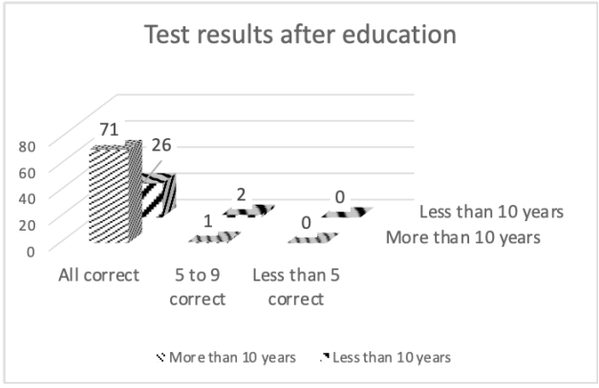

Figure 3: Presentation of the results after education

The Hi-squared test shows that, overall, there is no statistically significant difference in the test result between the two groups of doctors.

DISCUSSION

The first step in screening is to identify the patient's level of risk of colorectal cancer (CRC) as the level of risk affects recommendations for screening and monitoring. Thus, it is generally established that patients are either at average or at increased risk. We estimate the risk of CRC for an adult, who is 20 years old or older on initial visit, unless the genetic risk is already known and documented, in order to identify high-risk patients who should start screening on CRC at an earlier age than on average [9]. We start screening at the age of 45 in most adults at average risk, in order to balance the benefits of detection and prevention with the burden on the patient and the risk of damage of screening. We continue screening on CRC until the age of 75 for patients at average risk, as long as their life expectancy is 10 years or more.

Most guidelines recommend screening at least until 75 years of age for patients at average risk of CRC. Screening decisions should be individualized and based on joint decision-making for persons aged 76-85. A screening until the age of 86 may be reasonable for patients who have never been to a screening, depending on their comorbidities[10]. Colorectal cancer (CRC) is a common and fatal disease. In the United States, about 153,000 new cases of colon cancer are diagnosed annually [1]. CRC can be diagnosed after the onset of symptoms or through screening of asymptomatic individuals. In a good part of the population colorectal cancer occurs immediately above 35 years of age, and that colorectal cancer ranks second in frequency and per percentage of mortality from malignancies worldwide [11]. The education of medical personnel to timely identify risk groups and enable the diagnosis of precancerous lesions or colorectal cancer in the early stages of the disease is crucial.

The project included 100 doctors of different specialties, dominated by family medicine specialists. One of the important reasons is that they make first contact with patients. Their education increases the chances of early indications of the disease, which implies fewer risks of coming to a phase where there are significantly fewer possibilities of healing or therapy that enables quality of life. The knowledge test was conducted before the education, in order to gain insight into the level of previous knowledge in the field that is the subject of the education. The fact that there is no case that someone gave all the correct answers points to a low level of knowledge in the given domain which implies a strong need for education of this type. This percentage is higher for doctors with a duration of service less than 10 years (96.43%) compared to doctors with a duration of service more than 10 years (91.67%). This points to possible shortcomings in the knowledge of the first group of doctors. On the other hand, doctors with longer internships seem to compensate for the lack of education by increasing experience in practice. The knowledge test was also carried out after the education, in order to look at the success and level of knowledge achieved. The data indicate that there has been a tangible improvement in the results. There are no cases of anyone having less than 5 correct answers. It should be noted that in this case the level of data agreement (0.129) is significantly lower than the pre-education test (0.402). This indicates differences in the level of knowledge adoption dynamics. In both groups there is an extremely large percentage of those who had all the correct answers. It is important to draw attention to the percentage structure which indicates the adoption dynamics and the need for additional analysis. In a group of doctors with a service longer than 10 years, the percentage of those who had all correct answers (98.61%) is greater than the percentage of those who did not have correct answers prior to education (91.67%), indicating visible progress. One possible explanation is based on practical experiences. In a group of doctors with a duration of service less than 10 years, the percentage of those who had all correct answers (92.86%) is lower than the percentage of those who did not have correct answers prior to education (96,43%). This should be subject to special analysis from the point of view of causes, such as structure of practice, prior education and the like.

CONCLUSION

From all of the above it can be concluded that given the high incidence and also high mortality, colorectal cancer deserves special attention when it comes to the screening program in our region and country. This project pointed to the necessary education of healthcare professionals in this area, who are involved in early detection programmes for colorectal cancer, especially family medicine specialists, surgeons and gastroenterologists. Continuous refreshing of knowledge, i.e. updating guidelines and guides based on the best clinical experience of both gastroenterologists and surgeons with the transfer of the latest guidelines to family doctors can make the difficult struggle with CRC more efficient, which ultimately improves the results and outcomes of treatment. Education of this type should be continued in other cantons and at the entity level in order to ultimately reduce mortality from this deadly disease.

REFERENCES:

1. Cronin KA, Lake AJ, Scott S, Sherman RL, Noone AM, Howlader N, Henley SJ, Anderson RN, Firth AU, Ma J, Kohler BA, Jemal A. Annual Report to the nation on the status of cancer, part I: National cancer Statistics. Cancer. 2018; 124 (13): 2785. EPUB 2018 May 22.
2. Winawer SJ, Fletcher RH, Miller L, Godlee F, carpenter MH, Mulrow CD, Woolf SH, Glick SN, Ganiats TG, Bond JH, Rosen L, Zapka JG, Olsen SJ, Giardiello FM, Sisk, Van Antwerp R, Brown-Davis C, Marciniak DA, Mayer RJ. Colorectal cancer screening: clinical Guidelines and rationale. Gastroenterology. 1997; 112 (2): 594.
3. Steele CB, Thomas CC, Henley SJ, Massetti GM, Galuska DA, Agurs-Collins T, Puckett M, Richardson LC. Vital signs: trends in incidence of cancers associated with Overweight and obesity - United States, 2005-2014. MMWR morb mortal Wkly Rep. 2017; 66 (39): 1052. EPUB 2017 OCT 3.
4. Yang DX, Gross CP, Soulos PR, Yu JB. Estimating the magnitude of colorectal cancers preferred dering the era of screening: 1976 to 2009. Cancer. 2014; 120 (18): 2893.
5. Stop A, Knudsen A, Rutter CM, et al. Evaluating the benefits and Harms of Colorectal cancer screening strategies: A collaborative modeling application. ARQ publications No. 14-05203-EF-2. Rockville, MD: Agency for healthcare Research and quality; October 2015
6. Knudsen AB, Zauber AG, Rutter CM, et al. Estimation of benefits, Burden, and Harms of Colorectal cancer screening strategies: modeling study for the US preventive services Task force. PIT 2016; 315:2595.
7. Lansdorp-Vogelaar I, Kuntz KM, Knudsen AB, Wilschut JA, Zauber AG, van Ballegooijen M. stool DNA testing to screen for colorectal cancer in the Medicare population: a cost-effectiveness analysis. Ann Intern Med. 2010; 153 (6): 368.

8. Shaukat A, Kahi CJ, Burke CA, Rabeneck L, Sauer BG, Rex DK. ACG clinical Guidelines: Colorectal cancer screening 2021 Am J Gastroenterol. 2021; 116 (3): 458.
9. Ziogas A, Horick NK, Kinney AY, Lowery JT, Domchek SM, Isaacs C, Griffin CA, Moorman PG, Edwards KL, Hill DA, Berg JS, Tomlinson GE, Anton-Culver H, strong LC, Casten CH, Finkelstein DM, PLON SE. Clinically relevant changes in family history of cancer over time. THE PIT. 2011; 306 (2): 172.
10. US preventive services Task force, Davidson KW, Barry MJ, Mangione CM, Cabana M, Caughey AB, Davis EM, Donahue KE, Doubeni CA, Christ AH, Kubik M, Li L, Ogedegbe G, Owens DK, Pbert L, Silverstein M, Stevermer J, Tseng CW, Wong JB. Screening for Colorectal cancer: US preventive services Task force Recommendation status. THE PIT. 2021; 325 (19): 1965.
11. Siegel RL, Miller KD, Wagle NS, Jemal A. cancer Statistics, 2023. CA cancer J Clin. 2023; 73 (1): 17