

THE ANALYSIS OF THE RISK FACTORS IN COLORECTAL CANCER

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Abstract: *Prevention of colorectal cancer means reducing as much as possible the risk factors involved in the development of this disease. The action of these factors was correlated with increased chances of a person to do neoplasia. The incriminated factors lie within the body of the person and also in the environment and lifestyle. The most important is to know those factors, on which we can interfere, through change in lifestyles, diet and behaviour.*

Keywords: *colorectal cancer risk factors, prevention, lifestyle.*

1. Introduction

Cancer is defined as a cluster of morphologically abnormal cells; those grow fast and form different masses, called tumours. In the case of colorectal cancer, these masses of abnormal cells appear in the gut (colon and rectum).

Colorectal cancer is the common name used in the clinic for colon and rectum cancer, because they have very similar symptoms. [1, 5]. Colorectal cancer is the third cause of cancer in the U.S. and Europe and is more common among people over 50 years. If it is diagnosed in early stages it can be treated relatively easily and sometimes cured, but, because in most cases diagnosis is delayed, this type of cancer is the second leading cause of death, secondary to a neoplastic process (the first being the lung cancer). Specialists can not explain why some people develop colorectal cancer and others do not ever develop this type of tumour. [12]. However, medical studies have shown certain predisposing factors, personal or

environmental, that increase risk for colorectal cancer. There are risk factors as well as protective factors against colorectal cancer. Diet and lifestyle: it seems that the inadequate diet is associated with the appearance of colorectal cancer. People who have a diet high in fat (especially animal) protein, high calorie, alcohol and meat (both red and white meat) and a diet low in calcium and Folate are likely to develop colorectal neoplasm. A diet with low vitamin D may also increase colorectal cancer risk. A recent study has shown that a diet low in fat and high in dietary fibres, fruits and vegetables does not reduce the risk of colorectal cancer recurrence for a period of 3-4 years from the completion of initial treatment. Also, a diet rich in saturated fats associated with a sedentary lifestyle may increase the risk of colorectal cancer. There is evidence for the fact that smoking is associated with colorectal cancer occurrence. Non-steroidal anti-inflammatory medication (NSAIDs): recent medical studies show that long term use of these drugs is associated with a

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reduced risk of developing colorectal cancer [4]. Intestinal polyp excision: the surgical removal of intestinal polyps is also associated with a reduced risk of developing colorectal neoplasm. Polyposis is a risk factor for developing colon cancer as far as the adenomatous polyps in the colon tend to become malignant. This process is influenced by: type of polyps; histological, they are classified in neoplastic and non-neoplastic polyps. This last category includes hyperplastic polyps, hamartomas, lymphoid polyps and inflammatory polyps. On the other hand there are adenomatous polyps (their histological form may vary). Any polyp over 1 cm in diameter, which has a high degree of dysplasia or villous, histological structure, is associated with an increased risk of colorectal cancer. [3, 8, 9]. Female hormone treatment: use of hormones on women in menopause is associated with reduced risk for colon cancer but not rectal cancer. [1, 10].

Performing certain screening tests can prevent colorectal cancer risk. These tests intend diagnosing and treating certain diseases that can cause colorectal neoplasm and are recommended to be done regularly after the age of 40 years, among persons with increased risk for disease and after age of 50 years among other persons. In agreement with the International Associations of Oncology, screening could save thousands of lives if it would be made on most people over 50 years. [1, 2, 5, 6, 7].

2. Method and Material

There were studied 119 people admitted in Brasov County Emergency Hospital, in the Department of Medical Oncology (study group, 57 patients with colorectal carcinoma) and in the Department of

Internal Medicine (control group, 62 cases without carcinoma diseases or carcinoma located in organs other than colon and rectum) during 01.01.2009.-31.12.2009. We proposed a longitudinal study, analytical, retrospective, in which it was followed the impact of the risk factors and lifestyle on colorectal cancer incidence. Centralized data were based on questionnaires on lifestyle and observation sheets.

3. Results and Discussions

- In the series analyzed were 61 (51%) men and 58 (49%) women. The age of patients was between 20 and 80 years, average age being 56.76 years (at males with a average age of 58.17 years and women with a average age of 53.13 years). In Romania, colorectal cancer occupies the third place among all types of cancer, both for men (after lung and stomach) and for women after breast and uterine cancer. The incidence of colorectal cancer is considered average (18.55 / 100,000 inhabitants), discovering in the last 10 years, a marked increase of it, from 10.1‰ in 1989 to 18.55‰ in 1999. The incidence is 8% of the incidence of all malignancies. The incidence by age groups is higher than the average, over 50 years and increases almost exponentially. [1]. Worth mentioning that this neoplasia is ranked third in Romania at the number of deaths. The analysis of risk factors for patients tested positive showed a large proportion of those who ate fried food 60.2%, 43% smoked or roasted 59%, reduced consumption of vegetables and fruit, 68% and increased consumption of fat, 71% . (Fig. 1)

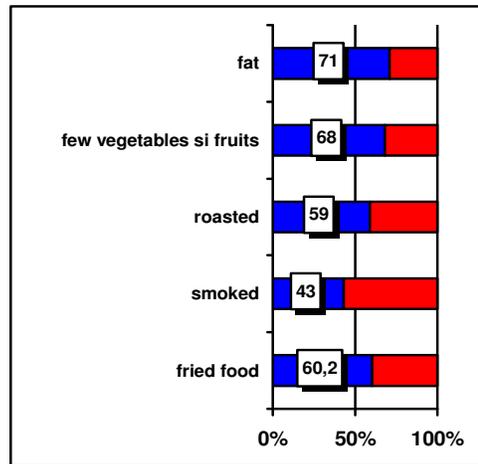


Fig. 1. *The percentage of unhealthy food consumption for patients with colorectal cancer*

The awareness of the benefits derived from a proper diet does not necessarily imply adopting them in practice. The benefits almost universally recognized of several foods with protective nature are not always continuously applied if people do not feel their health threatened.

About the consumption of a large variety of foods, especially fruits and vegetables show that a diet rich in vegetables, fruits, chicken, fish and grains, can prevent colorectal cancer. It should be excluded from alimentation animal fats. Food supplements with folic acid and calcium have positive influence in preventing colorectal cancer.

Body mass index (BMI) exceeds the normal on 36 patients from the study group, compared with 12 cases from the control group (63% versus 19%). (Fig. 2)

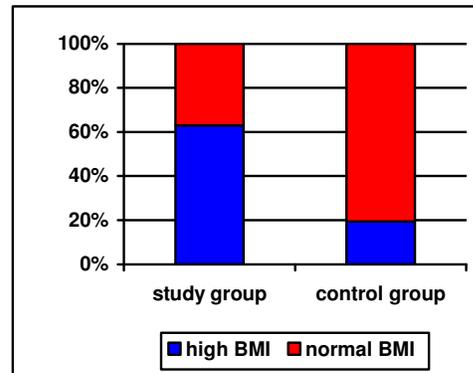


Fig. 2. *Share of abnormal BMI in patients with colorectal cancer versus control group*

Maintaining a healthy weight is beneficial, as the medical studies have shown that colorectal neoplasm is more common among overweight people (obese), especially those with excess abdominal fat it (androgynous type obesity).

At sedentariness studies, a risk factor for colorectal cancer, results were not surprising, over 67% of patients with colorectal cancer have not been physically active before the start of disease compared with those in the control group where the percentage is only 24%.

In terms of the number of insured / uninsured the groups are balanced, the differences between them being insignificant ($p > 0.05$). Observing the degree of socio-economic insertion study participants noted that over three quarters are or were employed, having health insurance. The presence of health facilitates the connection with the family doctor, the first contact of the patient in case of appearance of pathological conditions, but also an adviser regarding measures approved in secondary colorectal cancer prevention.

In terms of environment (rural / urban) groups are balanced, the difference between them is insignificant ($p > 0.05$). In rural areas, due to worse living conditions they may develop problems in addressing

to the family doctor or economic barriers cultural / religious. Over 76% of those taking the survey come from rural areas.

The participants were asked to specify if they have relatives with colon cancer. In both groups, the rate of affirmative answers were less than half of the participants, noting that, the colorectal cancer group heredo-colaterale background rate was 43% compared to 11% - control group.

Our study shows that chronic smokers have an increased risk for colorectal cancer, 39 cases compared with 21 smokers in the control group (68.4% vs. 33.9%). (Fig. 3)

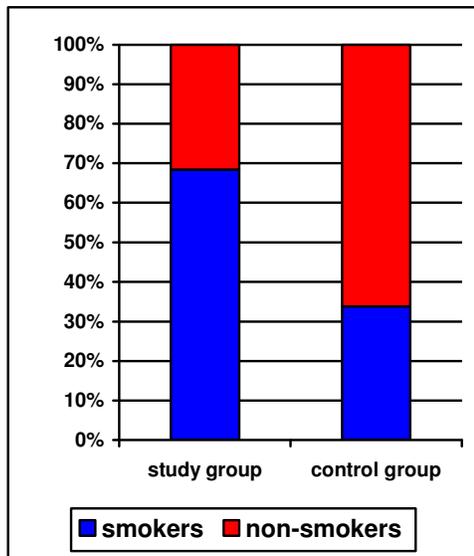


Fig. 3. *The percentage of smokers in patients with colorectal cancer versus control group*

The number of those who consume more than two glasses of liquor a day is significantly higher among those with colorectal cancer - 42 cases compared with patients without cancer than -17 cases (73.7% vs. 27.4%). (Fig. 4)

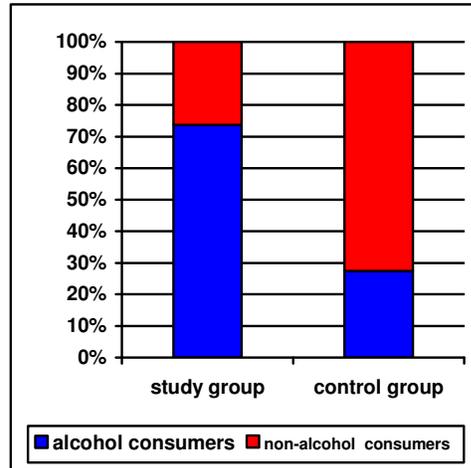
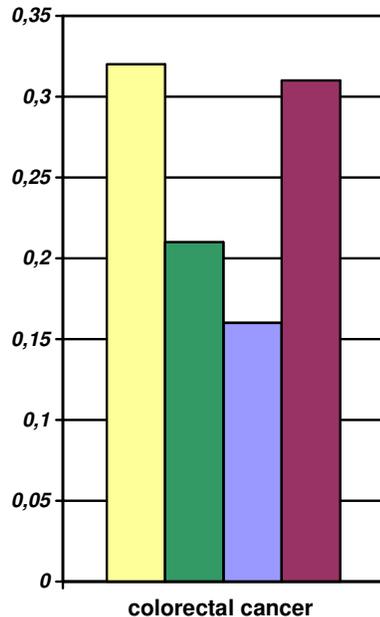


Fig. 4. *The percentage of alcohol consumers in patients with colorectal cancer versus control group*

It turned out that people who consume excessive alcohol have an increased risk of developing colorectal cancer.

Attributable risk (AR) is the difference between the frequency of disease in the exposed population and the rate of that disease in the unexposed population. The attributable risk compared to relative risk characterizes both the aggressiveness of the risk factor and the frequency of that disease, therefore it serves to identify those issues that can be addressed and resolved with maximum efficiency, using the best available resources. By eliminating smoking would reduce the incidence of colorectal cancer by 32%. By proper control of body weight would eliminate 21% of this disease. By reducing the amount of alcohol consumed, it would eliminate 16% of colorectal carcinomatosis processes. Through healthy diet would reduce the incidence of colorectal cancer by 31%. (Fig. 5)



	colorectal cancer
□ smoking AR	0,32
■ obesity AR	0,21
■ alcohol AR	0,16
■ unhealthy food AR	0,31

Fig. 5. Attributable risk factors studied in colorectal cancer incidence

Smoking, obesity, sedentary lifestyle, alcohol and unhealthy nutrition increase the number of cases of colorectal cancer and by eliminating these risk factors would reduce the incidence of this disease.

4. Conclusions

- Adopting a particular lifestyle, with respect to body weight, healthy nutrition, reducing the amount of alcohol consumed, quitting smoking and physical activity can prevent colorectal cancer.

References

1. Fazeli M.S., Adel M.G., Lebaschi A.H. Colorectal carcinoma: a retrospective, descriptive study of age, gender, subsite, stage, and differentiation in Iran from 1995 to 2001 as observed in Tehran University. *Dis Colon Rectum*. 2007 50 (7): 990-5.
2. Hardcastle J.D., Chamberlain J.O., Robinson M.H., Moss S.M., Amar S.S., Balfour T.W., James P.D., Ayanian J.Z., Sequist T. D., Zaslavsky A.M. et al. Physician Reminders to Promote Surveillance Colonoscopy for Colorectal Adenomas. *A Randomized Controlled Trial Journal of General Internal Medicine*, Vol. 23, Nr 6 / 2008.
3. Konishi F., Morson B.C. Pathology of colorectal adenomas: a colonoscopic survey. *J Clin Pathol* 1982; 35: 830-841.
4. Kudo S.E., Kashida H. Flat and depressed lesions of the colorectum. *Clin Gastroenterol Hepatol* 2005; 3: S33-S36.
5. Mandel J.S., Church T.R., Bond J.H., Ederer F., Geisser M.S., Mongin S.J., Snover D.C., Schuman L.M. The effect of faecal occult-blood screening on the incidence of colorectal cancer. *N Engl J Med*. 2000; 343: 1603-1607.
6. Mangham C.M. Randomised controlled trial of faecal occult blood screening for colorectal cancer. *Lancet* 1996, 348: 1472-1477,
7. Mansoor I., Zahrani I.H., Abdul Aziz S. Colorectal cancers in Saudi Arabia. *Saudi Med J*. 2002; 23 (3): 322-7.
8. Ransohoff D.F., Lang C.A. Screening colorectal cancer College of Physicians. *Colegiul Medicilor. Ann Intern Med* 1997; 126: 811-822.

9. St. John D.J, Mc Dermott F., Hopper J.L. *Cancer risk in relatives of patients with common colorectal.*
10. Washington M.K. Colorectal Carcinoma: Selected Issues in Pathologic Examination and Staging and Determination of Prognostic Factors. *Arch Pathol Lab Med* 2008; 132 (10): 1600–1607.
11. Winawer S., Fletcher R., Rex D., Bond J., Burt R., Ferrucci J., et al. Promote colorectal cancer.
12. Winawer S.J., Schottenfeld D., Flehinger B.J., Miller D.G. Screening for Colorectal Cancer with fecal occult blood testing and sygmoidoscopy. *J Natl Cancer Inst* 1993; 85 (16) : 1311-1318.