

THE DEGREE OF AWARENESS OF THE POPULATION OF THE KARAGANDA REGION ON THE INCIDENCE AND PREVENTION OF COLORECTAL CANCER: A LITERATURE REVIEW

A.M. MUTAN¹

¹«Karaganda medical university» NPJSC, Karaganda, the Republic of Kazakhstan

ABSTRACT

Relevance: Colorectal cancer (CRC) is the leading cancer in yearly morbidity and mortality. WHO forecasts that 2030 CRC incidence will exceed 2.2 million cases yearly, and mortality will increase to 1.1 million yearly. More than 3,000 new cases of colorectal cancer are detected annually in Kazakhstan. In disease control, it is necessary to develop preventive measures as much as possible. Preventive measures play a crucial role in reducing mortality from this disease. One of the most critical issues is the lack of public awareness about the disease.

The study analyzes the global experience in preventing colorectal cancer to develop measures to raise public awareness.

Methods: A continuous search was performed in the PubMed, CrossRe, Scopus, and Cochrane databases for 2013-2023 for the keywords "colorectal cancer," "risk factors," "public awareness," "medical literacy," "morbidity," and "prevention." In total, more than 75 scientific articles and 500 abstracts were reviewed.

Results: The problem is aggravated by the fact that among patients with an oncological diagnosis, patients with colorectal cancer, or patients with a confirmed diagnosis of the disease, there is insufficient information about this disease, and they neglect preventive measures. Firstly, we insist that the population is not fully aware of the responsibility for their health (this is influenced by a false sense of shame and insufficient awareness of the disease), and secondly, primary prevention is essential. Accordingly, it is necessary to increase the effectiveness of screening programs, improve awareness, and organize full-fledged assistance from the state in disease control.

Conclusion: Colorectal cancer is an urgent disease that occupies an essential place in Kazakhstan's list of oncological diseases. Due to the increased awareness of the population about this disease and the correct solution to prevention issues, it will be possible to reduce the incidence among patients. In this regard, it is necessary to widely disseminate information about the disease among the population and increase patients' responsibility for their health.

Keywords: colorectal cancer, risk factors, public awareness, medical literacy, morbidity, prevention.

Introduction: Colorectal cancer (CRC) is the leading cancer in the most common non-contagious diseases of the last 20 years. Colorectal cancer control is becoming increasingly important and challenging to solve. In particular, among socially significant diseases, cancer incidence ranks second after cardiovascular diseases. Colorectal cancer ranks second in men and third in women in prevalence worldwide. According to statistics, cancer is more common in men than women. The disease got younger in recent years. A decade or more ago, cancer was frequent in people over 65, and now it is common below 50. However, the bold reforms of the state in health control are decisive and vital for disease prevention. In particular, thanks to the regular organization of screening measures and the public awareness that these measures will be effective, it will be possible to prevent the disease early.

The study analyzes the global experience in preventing colorectal cancer to develop measures to raise public awareness.

Materials and methods: A search was performed using PubMed, CrossRef, Scopus, and Cochrane databases

for 2013-2023, publications of the world scientific literature on the risk factors of CRC and their prevention and on the issue of determining the degree of public awareness were studied. A continuous search was used for the keywords "colorectal cancer," "risk factors," "public awareness," "medical literacy," "morbidity," and "prevention." More than 75 scientific articles and more than 500 theses were reviewed.

Results: Colorectal cancer (CRC) consistently ranks third in the structure of cancer cases. There is a tendency to increase the morbidity of CRC in people under 50. The WHO considers colorectal cancer the third most common after lung and breast cancer (1.9 million cases in 2020). It accounts for 10.2% of all tumor types worldwide and is the second leading cause of cancer mortality (935 thousand cases in 2020). WHO forecasts that 2030 CRC incidence will exceed 2.2 million cases yearly, and mortality will increase to 1.1 million yearly [1]. More than 3,000 new cases of colorectal cancer are detected annually in Kazakhstan. Colorectal cancer (CRC) screening has been carried out in Kazakhstan since 2011. Every year, as part of CRC screening, about 850-980 thousand

men and women are examined at 50-70 years old. However, over the past 4-5 years, there has been a decrease in CRC detection from 6 to 3 cases per 10,000 screened patients, an increase in colonoscopy rejection with positive tests, and, as a result, an increase in missed CRC detection cases.

The low awareness of the male population should be noted in matters of awareness of the symptomatic and prevention of colorectal cancer [2]. The International Agency for Research on Cancer considers that the highest incidence of CRC is observed in Australia, New Zealand, North America, Europe, and Japan. The lowest is in Asia and Africa (India, Oman, Pakistan, Algeria, etc.), which may be due to changes in lifestyle and diet patterns of the population. It is due to the need for timely diagnostics, the low economic potential of these countries, and the poor quality of the information provided. In regions where the highest level of CRC morbidity is determined, morbidity trends are multidirectional, so CRC morbidity is stabilized in Europe and declined in North America [3-5]. A statistical analysis of epidemio-

logical data from 2015-2020 showed that CRC morbidity and mortality are heterogeneous and vary in countries with high and low human development indices (HDI). According to these data, the division of countries into three groups was carried out: in the first group, there is a tendency to increase morbidity and mortality simultaneously; in the second group, there is an increase in morbidity but a decrease in mortality; in the third group – a decrease in morbidity and mortality [6].

Lifestyle-related risk factors make a dominant contribution to the increase in CRC frequency. However, genetic predisposition plays a minor role (about 30% of CRC cases are classified as genetically deterministic) [7]. Several epidemiological control studies data confirmed it. It has been shown that CRC is more common in countries with a “Western lifestyle” (low dietary fiber content, mainly refined foods, high percentage of red meat consumption). In addition, some countries with a low CRC at first (Vietnam, India) can note their growth after economic growth and adaptation to the “Western way of life” [8].

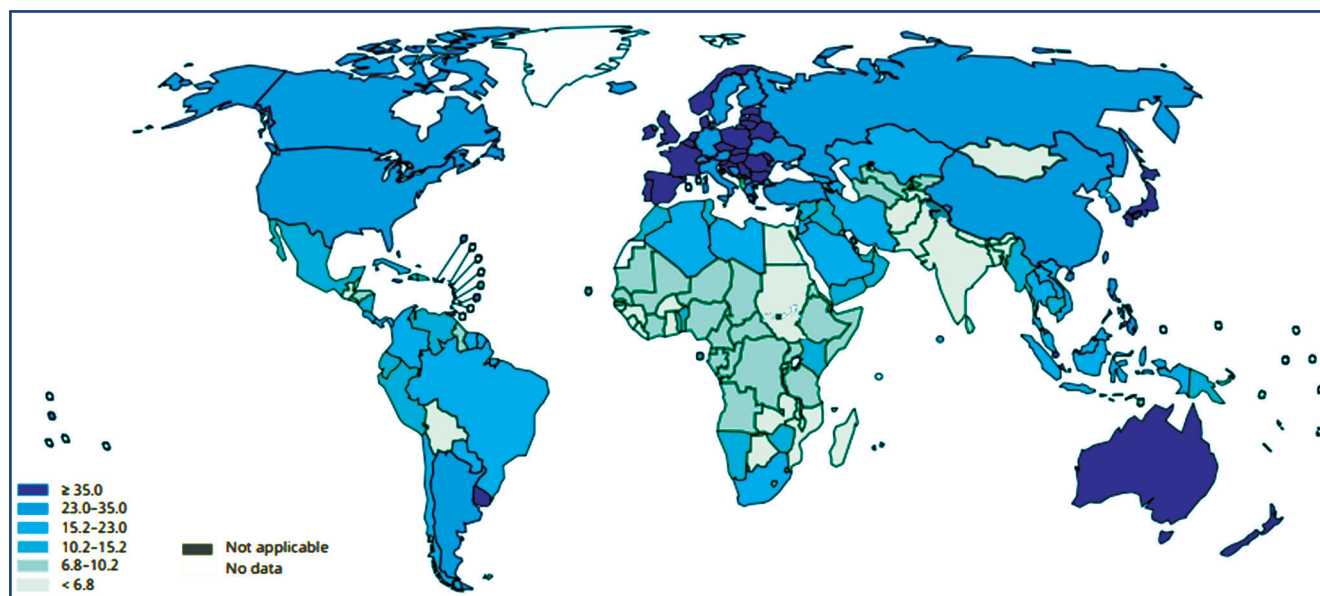


Figure 1 – Cartogram of standardized indicators of global colorectal cancer (GLOBOCAN 2020 data, both sexes, all ages) [9]

CRC primary prevention aims to prevent the disease by eliminating modifiable risk factors. These include consuming foods rich in dietary fiber and ballast, a sedentary lifestyle, excessive consumption of refined fats and red meat, smoking, alcohol abuse, and obesity [10]. A diet rich in dietary fiber (rich in vegetables and fruits) is the most studied protective factor about the development of CRC, characterized by a decrease in the incidence of about 40%. However, the role of this factor in CRC prevention of different localization is different: it is effective in preventing proximal CRC. It practically does not change the anus cancer morbidity.

On the other hand, eating large amounts of red meat and refined fats increases the risk of developing

CRC [11]. Smoking increases the risk of CRC twice and gives a poor standard of living [12]. Data on the impact of alcohol consumption on the morbidity and mortality of CRC vary among the authors. It has been shown that an increase in the incidence of CRC (distal and proximal localization) is associated only with excessive (more than 23 g per day) consumption of alcohol, moderate and moderate use of which is not associated with an increase in the incidence [13]. The probability of the occurrence of CRC in drinks consumed daily was studied. Drinking chlorinated water for 30 years increases the risk of colon cancer by 1.4 times [14]. Inflammation also plays a vital role in the pathogenesis of CRC: activation of inflammatory signaling pathways

is fundamental, the most important of which is the signaling pathway regulated by the transcription factor NF- κ B; methylation of several sensitive genes in which cytokines (especially tumor necrosis factor) play an important role [15]. However, bad diet, obesity, smoking,

alcohol intake, toxins exposure, and infectious diseases activate signaling inflammatory pathways. The authors of reports published in recent decades indicate that inflammation plays an essential role in all stages of malignant cell transformation [16].

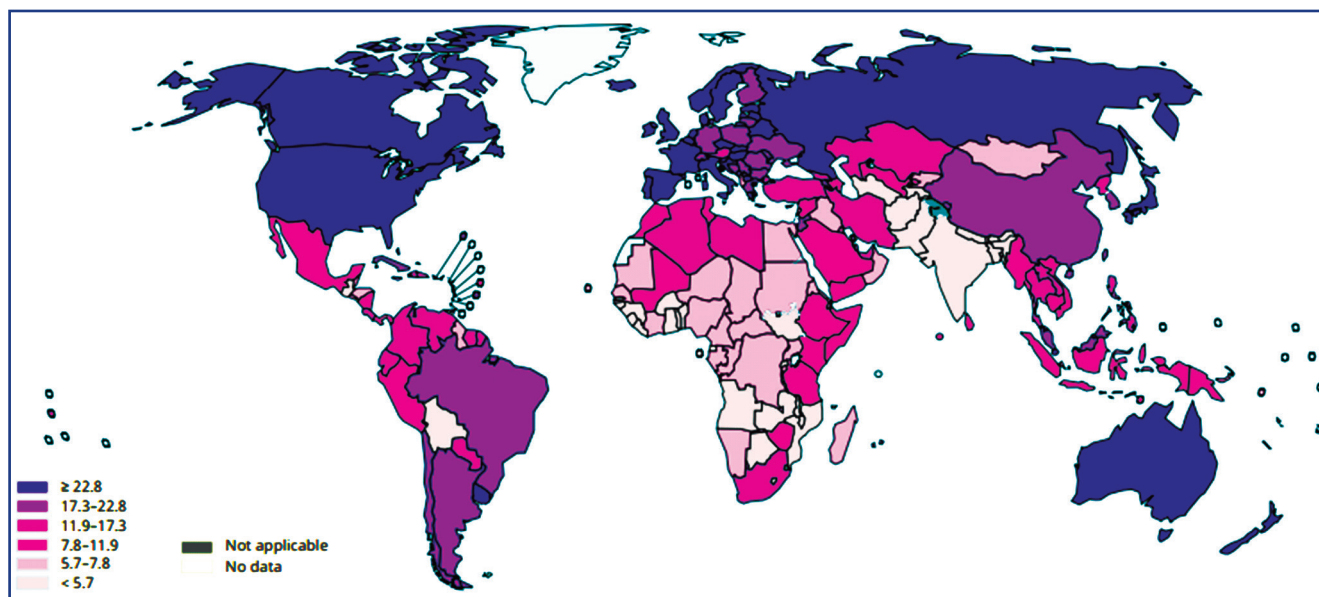


Figure 2 – Cartogram of standardized global colorectal cancer mortality (GLOBOCAN 2020 data, both sexes, all ages) [9]

Many authors consider that the level of physical activity is of great importance in preventing CRC. For the first time in an experiment in mice in 1952, a decrease in the risk of HPV of various localizations, including CRC, was observed with increased physical activity [17-18]. A meta-analysis of 52 studies showed that physical activity reduced the risk of CRC by 20-30%. At the same time, the authors indicate that even a small load (walking 3-4 hours a week) contributes to a decrease in risk by more than 15% [19]. The main mechanisms of a mobile lifestyle's preventive effect are stimulating the motility of the gastrointestinal tract and preventing obesity [20]. Various meta-analyses and systematic reviews discuss screening programs' role in preventing CRC incidence and mortality. In part of the studies, CRC screening has been shown to reduce both the incidence and mortality from cancer. However, the authors of many works note that screening programs can reduce mortality but not the incidence of CRC [21].

There are invasive screening methods (colonoscopy, sigmoidoscopy) and non-invasive (stool and blood tests, radiation examination methods). Fecal occult blood tests are often used: (gFOBT and FIT. Gfobt) or guaiac occult blood test (guaiac fecal occult blood test) is based on the determination of heme peroxidase activity in feces. This method is one of the most studied, used since the 1970s for screening in many European countries (Croatia, Portugal, Finland, etc.). The advantages of the test include low cost and ease of execution. To increase the effectiveness of Gfobt, its highly sensi-

tive modifications — Hemoccult Sensa and Hemoccult ICT- have been developed, making it possible to detect low hemoglobin concentrations. According to different CRC results, the sensitivity of different Gfobt tests varies from 31-63%, and the specificity is 92-96%. Colonoscopy is the "gold standard" for CRC screening with high sensitivity and specificity [22-24]. Precancerous significant intestine diseases include one or more adenomas (polyps) of the large intestine, nonspecific ulcerative colitis, and Crohn's disease. Detecting polyps is vital in cancer prevention, as colon cancer often develops from polyps. The risk of a colon polyp becoming cancerous is high: in a polyp less than 1 cm in size – 1.1%, 1-2 cm – 7.7%, more than 2 cm – 42%, in the middle – 8.7% [25]. Risk factors include whether the patient's age is over 50 years, if he has previously suffered from female genital and breast cancer, or if he has colon cancer. Timely detection of colorectal cancer involves early diagnosis, that is, in the absence of all clinical manifestations of the disease and preclinical stages. Screening or early detection of colorectal cancer is done through the finger, endoscopic, and hemocult tests. About 70% of all rectal carcinomas are detected by a finger examination of the rectum.

Therefore, digital rectum examination is mandatory in preventive examinations by a gynecologist, urologist, and doctors of other specialties. When using modern flexible sigmoidoscopes with a length of 60 cm, it is possible to detect 55% adenoma and carcinoma of the de novo developing Sigmoid and rec-

tum. The sensitivity of this method is 85%. The American Association of Doctors recommends performing a sigmoidoscopy every 3-5 years from age 50 in people who do not complain of intestinal dysfunction. However, the possibility of using these methods for extensive screening seems doubtful due to their complexity and high cost. Therefore, most oncologists recommend limiting themselves primarily to these examination methods among people with increased risk factors for colorectal cancer [26-27]. The primary and early symptom of colorectal cancer is the appearance of blood in the stool. That is why the fecal occult blood test is a "classic" test used to diagnose colon and rectal cancer early. To date, it is considered a laboratory study recommended for annual examination for the timely diagnosis of colorectal cancer in all people over 50 [28]. Patients face multifaceted problems resulting from the disease due to a lack of awareness of CRC risk factors and symptoms [29]. Research has shown that raising awareness of CRC in the general population and participating in cancer screening early treatment may increase opportunities for disease control, decrease prevalence, and increase survival [30].

Discussion: It was mentioned above that the main event in colorectal cancer control is a preliminary examination. In this regard, the implementation of screening programs in the country's healthcare system is supported as much as possible. As a result, we can detect malignant diseases promptly, reducing the mortality rate from diseases. Scientific articles in the literature review show that colorectal cancer is increasing over the years, is getting younger, and is more prevalent in men than women. Adopting a healthy lifestyle, as well as a healthy diet, reduces the risk of CRC. Territorial levels of incidence of malignant neoplasms, including CRC, showed that there are regions that are leading in terms of annual incidence indicators (Pavlodar, Kostanay, North Kazakhstan, East Kazakhstan, Karaganda regions), which determines the need for active primary and secondary prevention of CRC in these regions, as well as the work of other specialists. At the same time, the South Kazakhstan region, Kyzylorda, and Mangistau regions gave meager rates of CRC incidence not only by the country's standards but also on a global scale. However, these indicators may be lower due to other factors.

There are changes in indicators due to false feelings of shame, lack of timely examination due to incorrect information, etc. As noted, screening measures are essential to prevent CRC mortality and morbidity. The following simple rules can be included in the screening measures. On the day of the procedure, the number of patients who refused a colonoscopy and those who gave consent but changed their minds during the procedure should be recorded. According to the calculations, on the day of the procedure, the number of cases of cancellation of the consent to the study should be less than 5%, and during the study — less than 1% of cases of cancellation of the consent. The screen-

ing program must also guarantee compliance with the consent procedure; it should include a detailed explanation of the essence of the upcoming study and the need to prepare for it, as well as a discussion of all the risks and benefits associated with conducting the study. Patients should also be aware that a severe illness can be missed and that early and late complications are very likely. After the examination, patients should be allowed to consult directly 24 hours a day in case of complications after the procedure. In the study, people can deny their consent. In addition, patients should be informed that there are cases in which the study cannot be stopped immediately (for example, during a polypectomy cycle). Cases of cancellation of the agreement must be recorded and taken into account in the screening program. It is necessary to carefully periodically monitor the following indicators: the level of participation in the screening program, the organization of re-screening, and subsequent examination of patients with positive screening results.

In the context of an increase in the incidence of colorectal cancer CRC and its tendency to "rejuvenate," it is essential to improve the quality of endoscopic studies that reduce the incidence of CRC. Currently, the main obstacles in Kazakhstan are such problems as low awareness of the population about CRC, a low percentage of prescribing hidden blood tests by outpatient doctors, insufficient high-quality colonoscopies, and the lack of unified national recommendations for managing patients with suspected CRC. Early colon and rectal cancer diagnosis today is crucial in minimizing cancer mortality risk. It should be borne in mind that this is available to all people who come to undergo an examination. In addition, colorectal cancer is more accessible to treat than many other cancers. The probability of successful cancer treatment at an early stage is more than 80%. Priority should be given to developing and disseminating structured educational programs among representatives of the public, supply and medical institutions, politicians, and political leaders.

Conclusion: In conclusion, we can point out the following recommendations for preventing cancer:

- Effective educational programs are applied appropriately for each participant, and the development and dissemination of cheap, easy-to-use, non-troublesome clinical methods.

- It is essential to develop colorectal cancer screening as part of general preventive medicine, promoting screening on a national and regional scale.

- It is necessary to determine the target group of the population – for example, asymptomatic men and women of a certain age with risk factors (e.g., family). In addition, the decision to conduct screening for colorectal cancer should be based on the assessment of the prevalence of this pathology among the population being screened, as well as the screening strategy (the tests being carried out, the frequency of their conduct, the age of the subjects), the recommendations of the rel-

evant medical guidelines, the availability of resources, the degree of risk and the cultural level of the population. In this regard, supporting reputable specialists, active segments of the population, and the media is especially important.

Take up the assessment of the feasibility of the proposed program – the availability and allocation of resources (financial, personnel, diagnostic equipment). It is essential to assess the population's particular cultural and linguistic characteristics. It is necessary to identify the places of screening and ensure interconnection (training and training) with doctors who carry out the examination (general practitioners, etc.) and with the groups of the studied population.

Developing and disseminating patient-oriented screening guidelines, diagnostic methods, treatment, and monitoring is essential. It is necessary to involve patients in the screening program and improve the methods of their further monitoring. Future research should include all recommended screening methods to understand patient preferences in colorectal cancer screening. The recommended methods for screening for colorectal cancer vary depending on their effectiveness, safety, cost, and usability.

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АҢДАТПА

ҚАРАҒАНДЫ ОБЛЫСЫ ХАЛҚЫНЫҢ КОЛОРЕКТАЛЬДЫ ҚАТЕРЛІ ІСІКПЕН СЫРҚАТТАНУ ЖӘНЕ ОНЫҢ АЛДЫН АЛУ МӘСЕЛЕЛЕРІ БОЙЫНША ХАБАРДАР БОЛУ ДӘРЕЖЕСІ: ӘДЕБИЕТКЕ ШОЛУ

А.М. Мутан¹

¹«Қарағанды медицина университеті» КЕАҚ, Қарағанды, Қазақстан Республикасы

Өзектілігі: Онкологиялық аурулардың тізімінде колоректальды қатерлі ісік (КҚІ) жыл сайын аурушаңдылық және өлім-жітім көрсеткіштері бойынша жетекші орынды алып келеді. Дүниежүзілік денсаулық сақтау ұйымының (ДДҰ) алдын ала болжамдары бойынша, 2030 жылға қарай колоректальды қатерлі ісік (КҚІ) аурушаңдығы жылына 2,2 млн-нан асады, ал өлім-жітім жылына 1,1 млн-ға дейін артады. Қазақстанда жыл сайын колоректальды қатерлі ісіктің 3000-нан астам жаңа жағдайы анықталады. Аурумен күресте профилактикалық іс-шараларды барынша дамыту керек. Алдын алу шараларын қолдану аталған дерттен болатын өлім-жітімді азайтуда шешуші рөлге ие. Оның ішіндегі маңызды мәселелердің бірі – халықтың ауру туралы жеткіліксіз ақпараттануы.

Зерттеудің мақсаты – колоректальды қатерлі ісіктен болатын сырқаттанушылықтың алдын алу бойынша әлемдік тәжірибені пайдалана отырып, халықты ақпараттандыруды арттыру үшін қолданылатын іс-шараларды ұсыну.

Әдістері: 2013-2023 жылдардағы PubMed, CrossRef, Scopus және Cochrane дерекқорларынан «колоректальды қатерлі ісік», «қауіп факторлары», «халықтың хабардарлығы», «медициналық сауаттылық», «сырқаттанушылық», «алдын алу» кілт сөздері бойынша үздіксіз іздеу пайдаланылды. Нәтижесінде 75-тен астам ғылыми мақалалар мен 500-ден астам тезистер қаралды.

Нәтижелері: Онкологиялық диагнозы бар науқастардың, колоректальды қатерлі ісікпен ауыратын немесе ауру диагнозы расталған науқастар арасында аталған дерт туралы жеткілікті түрде ақпарат алынбағаны және алдын алу шараларына немқұрайлы қарайтындықтары – мәселенің ушықтырған. Себебі, біріншіден, халықтың өз денсаулығы алдында жауапкершілікті толық сезінбеуі (оган әр түрлі себептердің өсер етуі: жалған ұят сезімі, толыққанды ақпараттанбау), екіншіден, профилактикада біріншілік алдын алудың маңызды екендігін ала тартамыз. Сәйкесінше скринингтік бағдарламалардың нәтижелілігін арттыру, ақпараттануды жетілдіру және дертпен күресте мемлекет тарапынан толыққанды көмекті ұйымдастыру керек.

Қорытынды: Колоректальды қатерлі ісік – Қазақстандағы онкологиялық аурулардың тізімінде маңызды орынды алатын, өзекті дерт болып табылады. Халық арасында аталған ауру туралы хабардар болуды арттыру және алдын алу мәселелерін дұрыс шешу арқылы, науқастар арасындағы аурушаңдылықты азайтуға мүмкіндік туады. Осы орайда ауру туралы ақпаратты халық арасында кеңінен тарату сонымен қатар, науқастардың өз денсаулығы алдында жауапкершілігін арттыру қажет.

Түйінді сөздер: Колоректальды қатерлі ісік, қауіп факторлары, халықтың хабардар болуы, медициналық сауаттылық, аурушаңдылық, алдын-алу.

АННОТАЦИЯ

СТЕПЕНЬ ИНФОРМИРОВАННОСТИ НАСЕЛЕНИЯ КАРАГАНДИНСКОЙ ОБЛАСТИ ПО ВОПРОСАМ ЗАБОЛЕВАЕМОСТИ И ПРОФИЛАКТИКИ КОЛОРЕКТАЛЬНОГО РАКА: ОБЗОР ЛИТЕРАТУРЫ

А.М. Мутан¹

¹НАО «Медицинский Университет Караганды», Караганда, Республика Казахстан

Актуальность: В списке онкологических заболеваний колоректальный рак (КРР) ежегодно занимает лидирующие позиции по показателям заболеваемости и смертности. По предварительным прогнозам ВОЗ, к 2030 году заболеваемость КРР превысит 2,2

млн в год, а смертность увеличится до 1,1 млн в год. Ежегодно в Казахстане выявляется более 3000 новых случаев КРР. В борьбе с болезнью необходимо максимально развить профилактические мероприятия. Применение профилактических мер играет решающую роль в снижении смертности от данного заболевания. Одна из самых важных проблем – недостаточная информированность населения о болезни.

Цель исследования – предложить меры по повышению осведомленности населения на основе изучения мирового опыта профилактики заболеваемости колоректальным раком.

Методы: В базах данных PubMed, CrossRe, Scopus и Cochrane за 2013-2023 гг. был проведен непрерывный поиск по ключевым словам «колоректальный рак», «факторы риска», «осведомленность населения», «медицинская грамотность», «заболеваемость», «профилактика». Всего было изучено более 75 научных статей и 500 тезисов.

Результаты: Проблема усугубляется тем, что среди больных с онкологическим диагнозом, больных КРР или пациентов с подтвержденным диагнозом КРР недостаточно информации о данном заболевании, и они пренебрегают профилактическими мерами. Во-первых, мы настаиваем на том, что население не полностью осознает ответственность перед своим здоровьем (на это влияют различные причины: ложное чувство стыда, недостаточное осведомленность о болезни и так далее), а во-вторых, первичная профилактика важна. Соответственно, необходимо повысить результативность скрининговых программ, улучшить информированность и организовать полноценную помощь со стороны государства в борьбе с болезнью.

Заключение: КРР является актуальным заболеванием, занимающим важное место в списке онкологических заболеваний Казахстана. Благодаря повышению осведомленности населения о данном заболевании и правильному решению вопросов профилактики, появится возможность снизить заболеваемость среди больных. В этой связи необходимо широкое распространение информации о заболевании среди населения, а также повышение ответственности пациентов перед собственным здоровьем.

Ключевые слова: Колоректальный рак (КРР), факторы риска, осведомленность населения, медицинская грамотность, заболеваемость, профилактика.

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Author's data:

Authors' data:

Mutan A.M. (corresponding author) – 2nd-year Master's student, Public Health School at Karaganda Medical University, Karaganda, the Republic of Kazakhstan, tel. +77075669128, e-mail: MutanA@qmu.kz, ORCID ID: 0009-0009-3181-2515

Correspondence address: Mutan A.M., «Karaganda Medical University» NPJSC, Gogol St. 40, Karaganda 100000, the Republic of Kazakhstan.