Early colorectal cancer screening – No time to lose

Wang Y et al. Early CRC screening

Ying Wang, Zheng-Long Wu, Yi-Gang Wang, Hui Wang, Xiao-Yuan Jia
Abstract
In this editorial, we comment on the article entitled “Stage at diagnosis of colorectal cancer through diagnostic route: Who should be screened?” published in a recent issue of the World Journal of Gastroenterology, 2024; 30(10): 1368-1376. Colorectal cancer (CRC) is emerging as an important health issue as its incidence continues to rise globally, adversely affecting the quality of life. Although the public has become more aware of CRC prevention, most patients lack screening awareness. Some poor lifestyle practices can lead to CRC and symptoms can appear in the early stages of CRC. However, due to the lack of awareness of the disease, most of the CRC patients are diagnosed already at an advanced stage and have a poor prognosis.

Key Words: Colorectal cancer; The immunochemical fecal occult blood test; Diagnostic route; Cancer screening; Stage at diagnosis


Core Tip: Briefly summarises the factors that contribute to colorectal cancer and the early symptoms. The use of the immunochemical fecal occult blood test (iFOBT) in different countries is explored as well as the importance of screening at an early stage. Highlighting the critical role of early screening in colorectal cancer treatment, this editorial carefully blends social context and scientific insights to reveal the dynamic landscape of this evolving field.

INTRODUCTION
Colorectal cancer (CRC) is the third most common cancer worldwide, and its occurrence and progression are largely attributed to genetic instability of key mutated genes[1]. Although CRC patients undergo surgery and chemotherapy, the side effects and recurrence rate remain high. Patients with advanced CRC usually have poor
outcomes. Therefore, in order to improve prognosis, early treatment is necessary, which will increase patient survival[2-5]. In order to disseminate knowledge about CRC screening, public health institutions are also trying to promote the importance of CRC screening. Studies have found that approximately 30-50% of the eligible population do not receive early screening for CRC. In addition, more than 70% of CRC cases are detected through non-screening routes[6,7].

Early symptoms of CRC are not obvious, thus it is often found only in the late stage in the clinic. In addition, CRC is also a challenging disease, and its pathogenesis is unclear. However, compared to other cancers, CRC is an easily preventable cancer. Due to no obvious symptoms in the early stages of CRC development, it is essential to develop early detection techniques.

However, there are shortcomings in traditional screening methods, and many people who are eligible for screening have not been screened[8]. This paper describes CRC diagnosed earlier in hospitals, and the methods we recommended for early CRC screening.

**Early-onset CRC risk factors and symptoms**

CRC is associated with a number of risk factors. In Western countries, there is evidence that these risk factors are associated with lifestyles such as smoking, overweight, excessive alcohol consumption, consumption of red meat and processed meat, low calcium and dietary fiber intake and inadequate consumption of fruit and vegetables[9,10]. Recent work from the Nurses’ Health Study found prolonged sedentary television viewing, a surrogate for an inactive lifestyle, was associated with an increased risk of early-onset CRC, particularly rectal cancer[11].

According to surveys and statistics, rectal bleeding is the most prevalent danger sign in patients with early CRC[12]. In addition, pain, changes in bowel habits such as constipation, diarrhea, unexplained weight loss, and anemia are also observed[13-16]. Previous studies have found that patients with early CRC, compared to patients with advanced CRC and control populations, present with abdominal pain, rectal pain,
changes in bowel habits, rectal bleeding and weight loss. Many of these symptoms occur in the early stage of CRC. Similarly, studies have found that patients with early-onset CRC present with abdominal pain, rectal pain, changes in bowel habits, rectal bleeding, and weight loss suggestive of an increased risk of early-onset CRC when compared to patients with late-onset CRC and control populations[17].

Although early CRC can result in symptoms, the current state of treatment is not encouraging. It has been shown that patients with early stage CRC take an average of six months from onset to diagnosis[15, 18-20]. There are several reasons why it takes so long to confirm the diagnosis. Firstly, patients do not realize that they are going to develop cancer, and there is very little awareness of basic care and healthcare protection. Secondly, some patients mistake the common conditions mentioned earlier for hemorrhoids, for example when bleeding from the rectum[21, 22]. Although the patient is unaware, it has been established that, at the time of diagnosis, these symptoms usually predict that colon cancer is already at an advanced stage and has a poor prognosis. Therefore, the adoption and implementation of standardized diagnostic tests is extremely important for the early diagnosis of CRC.

**Early screening of CRC and the immunochemical fecal occult blood test (iFOBT)**

CRC is a highly malignant tumor, its clinical manifestations and prognosis are closely related. Early screening and early detection can greatly improve the prognosis. As the incidence of CRC increases year by year, the U.S. government is also actively encouraging individuals to participate in CRC screening, but unfortunately, more than 70% of eligible people are not screened[23].

The incidence of CRC has increased significantly according to annual CRC registries, and there are a growing number of high-risk and screening groups. Early screening for CRC should not be delayed. In addition, there has been a report summarising current CRC screening guidelines and highlighting future blood-based and imaging-based screening programmes[24]. To date, although some progress has been made in CRC screening, there is still a considerable number of people who are not effectively screened for CRC, and there is a lack of effective CRC screening methods and follow-up
instructions[8]. Effective and necessary recommendations for CRC screening or follow-up are also needed for patients who are not adhering to treatment. CRC screening is a labor-intensive, material-intensive process, and tailoring information to each patient is costly[23, 25-28]. However, screening and treatment are essential in the early stages of the disease, and the cost is greatly reduced compared to the cost of late treatment.

A recent issue of the *World Journal of Gastroenterology* published an interesting paper entitled “Stage at diagnosis of colorectal cancer through diagnostic route: Who should be screened?”[8]. This study focused on the fact that screening reduced CRC deaths in Japan. CRC treatments rely heavily on the efficacy of early screening as well as the detection of CRC at an earlier and more appropriate time plus timely removal of the lesion. Japan also provides new technical support for the early screening of CRC and precancerous lesions, as well as a theoretical basis for the early diagnosis and treatment of CRC[29]. The research data for this article were from two local hospitals. Both hospitals are among the top hospitals in Japan for treating CRC cases and are designated as Cancer Care Hospitals. They treat many CRC cases, including many CRC patients in cancer care homes. Patients registered at both institutions were enrolled in the study. The conclusion drawn on the basis of these two hospitals is therefore informative.

This article used cancer registries from two Japanese facilities to clarify the stage at diagnosis in three groups: cancer screening, follow-up (patients detected during follow-up for other comorbidities), and symptomatic patients with some concomitant symptoms of bowel disease[8]. Symptomatic patients who show some unusual clinical manifestations are seen in hospital and are more inclined to undergo imaging and colonoscopy. It also confirms previous research that patients with some chronic diseases can be treated earlier due to their medical history[30, 31].

In addition, this article highlights the significance of the local policy and medical environment in Japan for early CRC screening[8]. Japan’s well-developed healthcare and universal insurance systems enable residents to make unlimited use of health resources[32] and to make screening a priority. Therefore, when a patient arrives at the
hospital, having a quick test performed improves their chances of being diagnosed quickly. In addition, the advanced local healthcare infrastructure allows the use of advanced diagnostic techniques such as colonoscopy and CT to help detect CRC patients earlier.

Last but not least, the iFOBT is mentioned in the article[8]. The FOBT is a fairly popular method for CRC screening, especially for patients who are reluctant to undergo invasive tests such as CT colonography and colonoscopy. The FOBT consists of two tests: chemo (gFOBT) and immuno (iFOBT). These methods are widely used in the United States and provide patients with an excellent option for early screening of CRC[33]. The use of iFOBT reduces the false-positive rate of CRC compared to the use of gFOBT (piaq-based fecal occult blood test) for CRC screening[34]. The iFOBT is also widely used in Australia. Studies have also found that 2-yearly iFOBT screening is not only beneficial to health but also cost-effective[35]. In Japan, as a result of the use of iFOBT, CRC incidence has been reduced by 10%[36] and CRC mortality by 62%[37]. An analysis of test characteristics showed that the iFOBT had a combined sensitivity of 79% for the detection of CRC[38]. The predictive value of iFOBT is used for the development of colorectal progressive adenomas in the clinical setting. In China, CRC is more likely to occur in people with advanced age, those who smoke, have diabetes mellitus, and who previously underwent a cholecystectomy; thus, attention should be paid to these groups, and use of the iFOBT has diagnostic significance for the development of adenoma in progressive stages[39]. The iFOBT is recommended for annual CRC screening because of its superior detection properties and its convenience compared with colonoscopy[40].

**CONCLUSION**

With the progress of research, the incidence and mortality of CRC are decreasing year by year[41]. However, its pathogenic mechanism is still unclear. The study in Japan underscores how early screening can effectively reduce the average risk of developing the disease partly due to early diagnosis and timely treatment[42]. The article also
pointed out the necessity of implementing the iFOBT strategy. The health sector advocates active participation in patient health education and offers screening advice tailored to individual patient needs. This reduces pain and related complications in patients with advanced cancer. We hope that early screening, early detection and effective intervention will reduce mortality from CRC.
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