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Colorectal cancer: Getting the perspective and context right

Jun De Lu, Kok Yang Tan

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Abstract

Colorectal cancer (CRC) is a significant global health burden, being the third leading cancer globally. Its incidence has been observed to be higher in developed regions such as North America and Europe with geographical variations in mortality rates. Efforts to address this disease burden include promoting early detection through screening and implementing treatment strategies to improve patient outcomes. With the growing and aging population, the incidence of CRC will undoubtedly increase. These epidemiological trends will mean that health-care professionals will increasingly encounter CRC in more complex patients. Hence, it becomes imperative to have a deeper appreciation of the pathophysiology of CRC and understand the intricate interplay between a patient's physiology and their goals of care before offering treatment. This review article will aim to encapsulate the important nuances and perspectives of managing this disease in the context of an elderly patient.

Key Words: Colorectal cancer; Cancer epidemiology; Management; Holistic care; Screening

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Core tip: Colorectal cancer (CRC) is a global health concern, especially among older individuals. A holistic, patient-centered approach, incorporating a multidisciplinary approach and shared decision-making is crucial for optimal management. Continued research and collaboration are vital for advancing knowledge and improving patient care in CRC treatment and prevention.

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INTRODUCTION

Colorectal cancer (CRC) represents itself as a significant global health burden, being the third leading cancer globally with approximately 1.14 million new cases and 538136 deaths in 2020[1]. Its incidence has been observed to be higher in developed regions such as North America and Europe, while lower rates have been observed in Africa and Asia[2]. There also appears to be geographical variations in mortality rates, most notably higher in low and middle-income countries due to limited access to public healthcare services[3-5]. Efforts to address this burden include promoting early detection through screening and implementing treatment strategies to improve patient outcomes.

CRC is strongly associated with aging, with incidence rates increasing substantially in older populations. Around 87% of cases are diagnosed in individuals aged 50 or older[6] with Zaki *et al*[7] finding that the incidence of CRC increases sharply after the age of 50. These findings underscore the significance of age as a major risk factor and emphasize the importance of early detection efforts through age-appropriate screening to mitigate the disease burden.

As the population of a country increases, so will the incidence of CRC. These epidemiological trends will mean that healthcare professionals will increasingly encounter CRC in more complex patients. Hence, it becomes imperative to have a deeper appreciation of the pathophysiology of CRC and understand the intricate interplay between a patient's physiology and their goals of care before offering treatment. As the population continues to grow and age, the burden and complexity of CRC patients will undoubtedly increase, further emphasizing the importance of a comprehensive and multidisciplinary approach to its management.

While certain risk factors for CRC such as the male gender, smoking and processed meat consumption are well-established in available literature, other risk factors lack robust data mostly being from observational studies. Pinheiro *et al*[8] has rightly addressed controversies surrounding the efficacy of certain interventions in reducing CRC risk such as vitamin supplements and dietary fiber. In particular, the popular notion of dietary fiber being a protective factor for CRC is not supported by robust scientific evidence with several studies yielding conflicting results. In the meta-analysis by Park *et al*[9] it was found that dietary fiber intake was not significantly associated with CRC risk. Similarly, Aune *et al*[10] found no significant association between dietary fiber intake and CRC risk in both men and women.

However, health promotion campaigns in certain countries still focus on dietary fiber as a protective factor against CRC. The Dietary Guidelines for Americans has reinforced the role of diet and increasing dietary fiber intake as important determinants of CRC prevention[11]. While dietary fiber is important for digestive health, the evidence to CRC prevention is lacking. It becomes important to take a step back to reconcile new perspectives and promote scientifically backed recommendations in healthcare policies and guidelines.

The implementation of policies to promote a healthy lifestyle and diet can prove itself to be a colossal task. Initiatives that focus on diet and exercise may face resistance due to entrenched societal norms and economic disparities. Furthermore, changing behaviors often rely on individual choices which are easily influenced by complex interactions between psychological, social, economic, and environmental factors. This makes it difficult to enforce policy changes solely through government mandates. Encouraging individuals to adopt and maintain healthy behaviors will require a multifaceted approach that can adequately address the aforementioned factors. Despite these challenges, some countries have implemented successful programs to promote healthy lifestyles. For example, Finland's North Karelia Project was first implemented in 1972, focusing on reducing cardiovascular disease risk factors through community-based interventions. This included diet modification, smoking cessation, and exercise. It achieved significant reductions in cardiovascular disease mortality rates over the years, demonstrating the feasibility and effectiveness of population-level interventions[12]. This highlights the potential impact of nation-directed policies although caution must be taken to interpret their success as it often hinges on large-scale collaborative efforts across multiple stakeholders.

CRC screening is of paramount importance due to its ability to detect precancerous lesions and early-stage cancer. This can significantly reduce mortality rates if treated early[13]. Studies have consistently demonstrated the efficacy of screening modalities such as colonoscopy, fecal occult blood tests, and sigmoidoscopy in reducing both incidence and mortality rates of CRC. The European Randomized Study of Screening for Colorectal Cancer and the National Health Service Bowel Cancer Screening Program in the United Kingdom have demonstrated significant reductions in CRC mortality rates through screening programs[14,15]. Most recently, the Nordic-European Initiative on Colorectal Cancer trial revealed an 18% relative risk reduction of CRC when comparing individuals who received a screening colonoscopy to individuals who had no screening[16]. However, achieving a perfect screening program for CRC remains elusive due to various challenges. These include issues related to accessibility, adherence, and cost-effectiveness. Moreover, disparities in healthcare access and resources contribute to the level of screening uptake and effectiveness across different populations and regions.

Hence, a more disruptive way of CRC prevention needs to be devised and implemented. Perhaps inspiration can be drawn from the strategy of human papilloma virus (HPV) vaccination for cervical cancer. Just as HPV vaccination targets the viral infection central to the pathogenesis of cervical cancer, chemo-preventive agents for CRC could focus on inhibiting inflammatory pathways[17], modulating gut microbiota dysbiosis[18], or targeting key signaling pathways in gene mutations that causes malignant transformation[19]. By leveraging on these strategies and incorporating innovative approaches targeting CRC risk factors, there is potential to significantly reduce the burden of CRC and improve public

health outcomes.

Efforts in medical care have primarily been focused on the pathology of CRC. However, a holistic assessment of a patient diagnosed with CRC is essential before deciding on the subsequent medical management of their disease. This allows for the optimization of medical outcomes and provides patient-centered care. This approach considers not only the pathology of the disease but also the patient's physiological status, psychosocial needs, and personal preferences. This can translate to lower rates of unnecessary imaging tests and invasive procedures in CRC patients, leading to cost savings and better patient experiences[20]. This approach emphasizes shared decision-making, respect for patient autonomy, and tailoring treatment plans to align with patients' goals and preferences. It has been shown that comprehensive assessment and tailored management plans can result in better patient outcomes and satisfaction[21]. Multidisciplinary team meetings, where patient cases are discussed comprehensively can lead to improved decision-making and reduced mortality rates in CRC patients[22]. Furthermore, in an increasingly aging population with longer life expectancies, care will become increasingly complex due to the higher prevalence of comorbidities and the need for individualized care plans. Global life expectancy has increased steadily, and this highlights the importance of addressing the unique needs of patients in CRC management.

CONCLUSION

In conclusion, the future of CRC surgery has only just begun, and it is imperative for healthcare professionals to be equipped with the latest knowledge so that they can work in a transdisciplinary team that aspires to deliver the best possible care. This review article has summarized the key issues and principles in appreciating the context of treating CRC in the elderly. We hope that this article can serve as a platform to stimulate more research and collaboration in the near future.

FOOTNOTES

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