Late Presentation of Colorectal Cancer at Tobruk Medical Center

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Abstract

Colorectal cancer (CRC) is a leading cause of cancer-related mortality worldwide, with delayed presentation posing a significant challenge to early diagnosis and improved survival rates. Understanding the causes of late presentation and its impact on disease progression is crucial for developing effective interventions. This study aims to explore the relationship between delayed presentation of colorectal cancer and its effects on disease staging and patient outcomes at Tobruk Medical Center. A retrospective analysis of 103 patients with pathologically confirmed colorectal cancer diagnosed between January 2017 and January 2022 was conducted. Data on demographic characteristics, diagnostic timelines, and tumor staging were analyzed, categorizing delays as long ($\geq$ 60 days) or short (< 60 days) based on the time from symptom onset to first medical consultation. The study revealed that 76.7% of patients experienced long delays in seeking medical care, which often resulted in advanced-stage disease at the time of diagnosis. Acute complications, such as intestinal obstruction, were observed in 59 patients, while 15 presented with distant metastases (Stage III or IV). These findings emphasize the urgent need for strategies to enhance early detection of colorectal cancer through public awareness campaigns, regular screening programs, and improved diagnostic protocols in healthcare facilities. Addressing these

factors could significantly reduce complications and improve survival rates for CRC patients.

Keywords: Colorectal cancer, delayed presentation, disease progression, early detection, Tobruk Medical Center.

التشخيص المتأخر لسرطان القولون والمستقيم بمركز طبرق الطبي

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الملخص:

يُعتبر سرطان القولون والمستقيم من الأسباب الرئيسية للوفيات المرتبطة بالسرطان على مستوى العالم، حيث يشكل التشخيص المتأخر تحديًا كبيرًا لتحقيق التشخيص المبكر وتحسين معدلات البقاء على قيد الحياة. يُعد فهم أسباب التأخر في التشخيص وتأثيره على تطور المرض أمرًا بالغ الأهمية لتطوير تدخلات فعّالة. تهدف هذه الدراسة إلى استكشاف العلاقة بين التشخيص المتأخر لسرطان القولون والمستقيم وتأثيره على مراحل المرض ونتائج المرضى في مركز طبرق الطبي. أُجريت دراسة تحليلية استعادية على 103 مرضى تم تشخيص إصابتهم بسرطان القولون والمستقيم بشكل مؤكد من خلال الفحص المرضي، بين يناير 2017 ويناير 2022. تم جمع البيانات المتعلقة بالخصائص الديموغرافية والجداول الزمنية للتشخيص ومراحل الورم، وتم تصنيف فترات التأخر إلى طويلة ($\leq$ 60 يومًا) وقصيرة (60 >) يومًا) بناءً على الفترة بين ظهور الأعراض والاستشارة الطبية الأولى. كشفت الدراسة أن 76.7٪ من المرضى تأخروا لفترات طويلة في طلب الرعاية الطبية، مما أدى غالبًا إلى تشخيص المرض في مراحل متقدمة. لوحظت مضاعفات حادة، مثل انسداد الأمعاء، في 59 حالة، بينما تم تشخيص 15 مريضًا بانتشار الورم إلى مراحل متقدمة (المرحلة الثالثة أو الرابعة). تؤكد هذه النتائج على الحاجة الملحة إلى استراتيجيات لتعزيز الكشف المبكر عن سرطان القولون والمستقيم من خلال حملات توعية عامة، وبرامج فحص منتظمة، وتحسين

بروتوكولات التشخيص في المرافق الصحية. يمكن أن يسهم التصدي لهذه العوامل بشكل كبير في تقليل المضاعفات وتحسين الوضع الصحي لمرضى سرطان القولون والمستقيم.

الكلمات المفتاحية: سرطان القولون والمستقيم، التشخيص المتأخر، تطور المرض، الكشف المبكر، مركز طبرق الطبي.

Introduction

Cancer continues to be a major global health challenge, with staggering statistics underscoring its impact. In 2020 alone, approximately 19.3 million new cases were diagnosed worldwide, accompanied by nearly 10 million cancer-related deaths. Among the numerous types of cancer, colorectal cancer (CRC) stands out as a significant contributor to cancer-related morbidity and mortality. Globally, CRC ranks as the third most commonly diagnosed cancer among women and the second among men, emphasizing its immense burden on public health systems. This high prevalence underscores the need for targeted strategies to reduce its impact.

The geographical distribution of CRC cases reveals stark regional disparities, with significantly higher prevalence in developed and rapidly industrializing countries compared to underdeveloped regions. These differences are often attributed to lifestyle factors such as diet, physical inactivity, and obesity, which are more common in high-income countries. Additionally, healthcare disparities, including access to advanced diagnostic tools, preventive measures, and early detection programs, further widen the gap in CRC incidence and outcomes between regions. Such variations highlight the critical need for resource-appropriate interventions to tackle this growing public health concern globally.

CRC symptoms are highly variable and depend on the tumor's anatomical location within the colon or rectum, which directly influences the disease's delectability. Tumors located on the right side of the colon often manifest with subtle, nonspecific

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symptoms such as chronic fatigue, iron deficiency anemia, and weight loss, which can delay diagnosis. In contrast, left-sided tumors are more likely to cause noticeable symptoms such as altered bowel habits, rectal bleeding, and tenesmus, prompting patients to seek medical attention sooner. This divergence in symptomatology plays a crucial role in the timing of diagnosis, often affecting the stage at which the disease is detected and, consequently, its treatment options and prognosis.

Surgical intervention remains the cornerstone of CRC treatment and provides the best chance for long-term survival, particularly when the disease is identified at an early stage. Despite significant advancements in surgical techniques, adjuvant therapies, and overall cancer management, a substantial proportion of patients continue to present at advanced stages of the disease. Late-stage diagnosis limits the effectiveness of available treatments, often necessitating palliative care rather than curative approaches, and results in poorer survival outcomes.

The delay in CRC diagnosis can be attributed to a complex interplay of patient-related and systemic factors. On the patient side, variables such as advanced age, the presence of comorbidities, low awareness of CRC symptoms, and socioeconomic barriers like financial constraints and limited educational attainment contribute significantly. Cultural beliefs, fear of cancer diagnosis, and stigma associated with invasive diagnostic procedures further delay medical consultation.

Systemic factors also play a pivotal role in delayed CRC diagnosis. Inadequate healthcare infrastructure, insufficient diagnostic facilities, and limited access to specialized care in low-resource settings exacerbate delays. The absence of routine genetic screening programs for hereditary CRC syndromes, such as Lynch syndrome, further hampers early detection efforts. This lack of preventive measures disproportionately affects patients with a family history of CRC, who remain at higher risk of developing the disease.

Addressing these multifactorial challenges is essential for improving CRC outcomes. Comprehensive strategies, including public awareness campaigns, expansion of screening programs, and strengthening healthcare infrastructure, are necessary to mitigate the global burden of CRC. By focusing on early detection and timely intervention, healthcare systems can significantly reduce CRC-related morbidity and mortality, paving the way for better patient outcomes and improved quality of life.

Aim of Study
The primary objective of this study is to assess the variation percentage of delayed presentation of colorectal cancer cases at Tobruk Medical Center, with the Scio-demographic factors. Additionally, the study seeks to evaluate how these delays impact disease progression, treatment outcomes, and overall survival rates. By identifying and analyzing the underlying causes of late diagnosis, this research aims to provide actionable insights for improving early detection strategies, enhancing patient outcomes, and reducing the burden of colorectal cancer within the region.

Patients, Materials, and Methods
This retrospective study was conducted at Tobruk Medical Center and focused on patients diagnosed with colorectal cancer over a five-year period, from January 2017 to January 2022. A total of 103 patients were included in the analysis, all of whom had been newly diagnosed with colorectal cancer during this timeframe. To ensure the reliability and validity of the study findings, only patients with a pathologically confirmed diagnosis of colorectal cancer were included. This criterion helped eliminate any potential diagnostic uncertainty and provided a solid foundation for subsequent analysis.
Data collection involved gathering comprehensive demographic information about each patient, such as age, gender, and socioeconomic status, to explore potential associations with

delays in seeking medical care. Additionally, detailed information on each patient's diagnostic history was obtained, including the timeline of symptom onset, the interval before seeking medical advice, and tumor characteristics such as location, stage, and histopathology. These variables were carefully documented to provide a thorough understanding of the factors influencing diagnostic delays.

One of the key variables analyzed was the concept of patient delay, which was defined as the time elapsed from the onset of symptoms to the patient's first medical consultation. This delay was further categorized into two distinct groups to facilitate a more structured analysis. A long delay was defined as a delay of 60 days or more, while a short delay referred to any delay of less than 60 days. This classification allowed for the examination of patterns and factors associated with prolonged delays in presentation, enabling the study to highlight the underlying reasons behind these delays and their potential impact on disease progression and treatment outcomes.

The study's design aimed to shed light on how delayed medical consultation affects the clinical course of colorectal cancer, with a particular emphasis on identifying barriers to timely diagnosis. By analyzing the collected data, the research sought to provide valuable insights that could contribute to improving early detection efforts and optimizing patient outcomes at Tobruk Medical Center and similar healthcare facilities.

Results

Out of the total 103 patients included in the study, the majority, 59 individuals, sought medical attention due to acute abdominal pain, which was later confirmed to result from intestinal obstruction caused by colorectal cancer. This highlights the role of emergent symptoms in prompting medical consultation for many patients, often when the disease has already progressed significantly.

An additional 29 patients received their diagnoses through a combination of elective diagnostic procedures, including

colonoscopy, radiological imaging, and histopathological examinations. These methods allowed for a more systematic identification of colorectal cancer in patients who may not have presented with severe or acute symptoms but were undergoing evaluation for other gastrointestinal complaints or as part of routine screenings.

Furthermore, distant metastases, indicative of advanced disease (classified as Stage III or IV), were detected in 15 of the cases. This finding underscores the concerning frequency of late-stage presentations among the patient population, reflecting the potential delays in seeking medical care or challenges in early detection. These results emphasize the importance of addressing barriers to timely diagnosis and increasing awareness about the early symptoms of colorectal cancer to improve outcomes and reduce the proportion of advanced-stage cases.
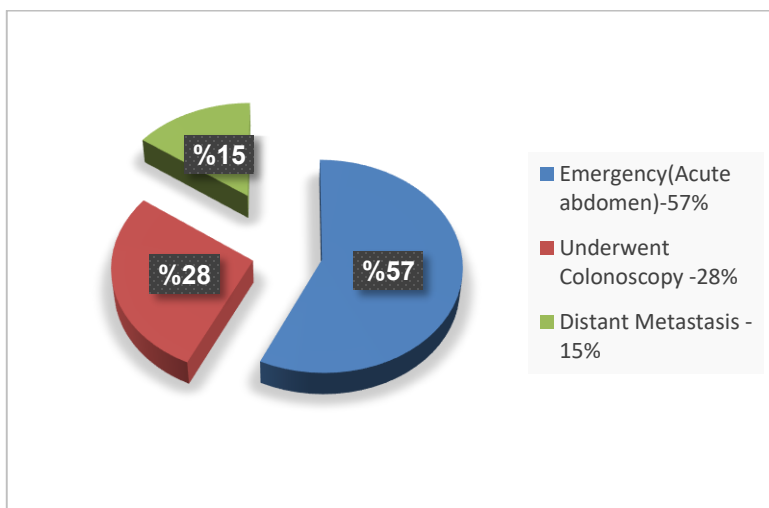

Figure 1. The percentage of colorectal cancer presentation

Table 1. The variation Between Socio-Demographic and Clinical Characteristics with Patient Delay.

Characteristics	Number of Cases	Patient Delay		Chi-square Test
		≥ 2 months 79 cases (76.7%)	< 2 months 24 cases (23.3%)	
Age Group				
48<	23	10 (43.5 %)	13 (56.5 %)	P 0.0261*
≥ 48	80	62 (77.5 %)	18 (22.5 %)	
Home residence				
Rural	71	52 (73.2 %)	19 (26.8 %)	P 0.0032*
Urban	32	21 (65.6 %)	11 (34.4 %)	

*p-value <0.05 was considered to be statistically significant.

Table 2. The variation Between Socio-Demographic and Clinical Characteristics with Patient Delay.

Characteristics	Number of cases	Patient Delay		Chi-square test
		≥ 2 months 79 cases (76.7 %)	< 2 months 24 cases (23.3 %)	
Educational status				
Illiterate	53	42 (79.2 %)	11 (20.8 %)	P 0.0461*
Primary education	32	18 (56.3 %)	14 (43.7 %)	
Secondary education and above	18	9 (50 %)	9 (50 %)	
Travel distance				
< 30 km	25	19 (76.0 %)	6 (24.0 %)	P 0.0105*
≥ 30 km	78	53 (67.9 %)	25 (32.1 %)	

Discussion

Numerous systematic reviews have emphasized the critical need for further research into how diagnostic delays influence disease progression and survival outcomes in colorectal cancer patients. These reviews highlight the complexities surrounding the relationship between delayed diagnosis and its impact on

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treatment effectiveness and overall prognosis. In the current study, it was observed that a significant majority of patients—76.7%—experienced a long delay of two months or more before seeking or receiving a confirmed diagnosis. This finding aligns closely with previous studies, which have consistently documented similar rates of delayed presentation among colorectal cancer patients [1].

A key factor contributing to these delays is the often benign and nonspecific nature of initial symptoms associated with colorectal cancer. Early signs such as mild abdominal discomfort, changes in bowel habits, or intermittent fatigue are frequently mistaken for self-limiting conditions [2], leading patients to postpone seeking medical care. This delay in recognizing the severity of their symptoms is compounded by a lack of awareness about colorectal cancer and its risk factors [3]. Additionally, many patients experience fear or denial about the possibility of a cancer diagnosis [3], further discouraging them from seeking timely medical advice [4]. Anxiety about undergoing invasive or uncomfortable diagnostic procedures, such as colonoscopy, also serves as a psychological barrier to early diagnosis.

Interestingly, the impact of patient age and comorbidities on diagnostic delays presents conflicting evidence in the literature. While some studies suggest that older patients and those with existing health conditions are more likely to receive expedited referrals due to their frequent interactions with healthcare systems, other research indicates that these same groups may still experience delays [5]. This could be due to overlapping symptoms from their comorbidities, which can mask the signs of colorectal cancer, or due to missed opportunities for early intervention during routine medical consultations.

Overall, the findings of this study emphasize the multifaceted nature of diagnostic delays in colorectal cancer. Addressing these delays requires a comprehensive approach that involves raising public awareness about early symptoms, reducing patient fear and anxiety, and enhancing the diagnostic accuracy

of healthcare providers. These steps are essential for improving early detection rates, optimizing treatment outcomes, and ultimately reducing colorectal cancer-related mortality.

Limitations

This study has several limitations that should be acknowledged when interpreting the findings. One of the primary limitations is the relatively small sample size, consisting of only 103 patients diagnosed with colorectal cancer. A larger cohort would have allowed for more robust statistical analyses and a deeper understanding of the factors influencing diagnostic delays. The limited number of participants also restricts the generalizability of the study's results to broader populations within the region or beyond.

Another significant limitation is the study's short timeframe, covering a period of five years from January 2017 to January 2022. While this period provided valuable insights into diagnostic patterns at Tobruk Medical Center, a longer study duration could have captured broader trends and variations over time, potentially offering a more comprehensive perspective on the issue of delayed diagnosis.

Furthermore, the absence of prior research on colorectal cancer in eastern Libya presents an additional challenge. Without existing local studies to serve as a benchmark, it becomes difficult to directly compare the findings or contextualize them within the broader scope of regional or national healthcare practices. This gap in the literature limits the ability to draw broader conclusions about how the factors identified in this study may align with or differ from those observed in other parts of Libya or similar regions.

These limitations highlight the need for future research with larger sample sizes, extended study periods, and a focus on establishing a more extensive body of local data. Such efforts would provide a stronger foundation for understanding the challenges associated with colorectal cancer diagnosis and guiding interventions to address them effectively.

Conclusions.

This study highlights a high percentage of delayed presentation among colorectal cancer patients at Tobruk Medical Center, often resulting in advanced-stage diagnoses and severe complications. To address this issue, there is an urgent need for public education on the early symptoms of colorectal cancer and the importance of seeking timely medical attention. Regular screening programs, particularly through colonoscopy, are vital for early detection, which enhances the chances of curative treatment and better patient outcomes. Additionally, implementing structured management protocols within surgical and diagnostic departments can facilitate timely evaluation, diagnosis, and intervention for suspected cases. A multidisciplinary approach involving surgeons, oncologists, and primary care providers is crucial to streamline the treatment process, improve early detection rates, and enhance the overall quality of care. Tackling these challenges effectively can significantly reduce the burden of delayed colorectal cancer diagnoses, improve survival rates, and contribute to better healthcare outcomes in the region.

REFERENCES:

[1] Salvador, P. F., Sonia, P. D., Beatriz, L. C., et al. (2010). Diagnosis delay and follow-up strategies in colorectal cancer. Prognosis implications: A study protocol. BMC Cancer, 10, 528.

[2] Pablo, V., Fátima, V., & Joaquín, C. (2015). Colorectal cancer diagnosis: Pitfalls and opportunities. World Journal of Gastrointestinal Oncology, 7(12), 422–433.

[3] Oberoi, D. V., Jiwa, M., McManus, A., & Hodder, R. (2014). Colorectal cancer: Applying a gender lens. Quality in Primary Care, 22, 71–79.

[4] Courtney, R. J., Paul, C. L., Sanson-Fisher, R. W., Macrae, F., Attia, J., & McEvoy, M. (2012). Current state of medical-advice-seeking behavior for symptoms of colorectal cancer: Determinants of failure and delay in medical consultation. Colorectal Disease, 14, e222–e229.

[5] Domínguez-Ayala, M., Díez-Vallejo, J., & Comas-Fuentes, A. (2012). Missed opportunities in early diagnosis of symptomatic colorectal cancer. Revista Española de Enfermedades Digestivas, 104, 343–349.