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Original article

Epidemiologic Features of Colorectal Cancer in Zlitan City, Libya

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ABSTRACT

Background and aims. *Colorectal cancer (CRC) is one of the most common cancers worldwide. the aim of this study was to investigate the epidemiologic features of CRC in Zlitan city, using data available in oncology outpatient department.* ***Methods****. A cross section retrospective descriptive study was conducted to represent the epidemiological features of CRC in Zlitan city of Libya.* ***Results****. Males were more affected with CRC than females. About 48% of CRC were within the age range 45 to less than 65 years old, followed by 32% with age group of 65 and younger than 85. Patients with CRC commonly presented with intestinal obstruction. Adenocarcinoma representing 96% of the histopathological types of the tumor, and were most common in rectosigmoid junction. Surgery was the main treatment for colorectal cancer, followed by chemotherapy and radiotherapy. Biopsy was considered as a major step in diagnosis of colorectal cancer.* ***Conclusion****. CRC is a disease of non-specific symptoms. It is advised to raise awareness about the need for earlier screening for CRC and the necessity for promoting healthier lifestyle choices as primary prevention.*

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INTRODUCTION

Colorectal Cancer (CRC) refers to a slowly developing cancer that begins as a tumor or tissue growth on the inner lining of the rectum or colon [1]. If this abnormal growth, known as a polyp, eventually becomes cancerous, it can form a tumor on the wall of the rectum or colon, and subsequently grow into blood vessels or lymph vessels, increasing the chance of metastasis to other anatomical sites [2]. Of the cancers that begin in the colorectal region, the vast majority (over 95%) are classified as adenocarcinomas. These begin in the mucus-making glands lining the colon and rectum [3]. Other less-common cancers of the colorectal region include carcinoid tumors (which begin in hormone-producing intestinal cells), gastrointestinal stromal tumors (which form in specialized colonic cells known as interstitial cells of Cajal), lymphomas (immune system cancers that form in the colon or rectum), and sarcomas (which typically begin in blood vessels but occasionally form in colorectal walls) [4]. Studies have demonstrated that increasing the awareness of the general population about CRC may lead to a decrease in the prevalence and rising willingness to involve in cancer screening, early treatment, and may increase the survival rate [3].

Colorectal cancer is the third most popular occurring cancer in men and the second most commonly occurring cancer in women. There were over 1.9 million new cases in 2020 [5]. Colorectal cancer is the second most common cause of death from cancer, estimated to be responsible for almost 935,000 cancer deaths [6]. Globally it is one of the cancers whose incidence is increasing comprising 11% of all cancer diagnoses [7]. According to GLOBOCAN 2020 data there is a broad geographic variation in CRC incidence and mortality among various countries of the world [8]. It has been recognized that the most significant increase in CRC incidence and mortality occurs in medium and high human

development index (HDI) countries that are adopting the "western" way of life [9]. Developed countries are at the highest risk of colon cancer. Obesity, sedentary lifestyle, red meat consumption, alcohol and tobacco are considered the driving factors behind the growth of CRC. Therefore, colorectal cancer is a disease of developed countries with a western lifestyle [10].

Factors that influence life expectancy, including health-related behaviors (smoking, obesity and exercise) and social factors (education, income and government expenditure on health), profoundly impact cancer development. Life expectancy levels must be considered when developing strategies to prevent and treat cancer [11].

CRC is one of the most common cancers worldwide. The incidence increased in 10 of 36 countries analyzed (all in Asia or Europe); India had the most significant increase, followed by Poland. All 10 of these countries have medium to high (HDI) scores. Six countries had a decrease in colon cancer incidence; these countries had the highest HDI scores; the United States had the most significant reduction. Seven countries (including all countries from Northern America) had a decrease in incidence among persons older than 50. Eight countries had an increase in colon cancer incidence among persons younger than 50 years, including the United Kingdom and India. Countries with a decreased or stable incidence among persons 50 years or older but a significant increase in persons younger than 50 years included Germany, Australia, the United States, Sweden, Canada and the United Kingdom. The decline in the incidence of CRC was recorded only in Italy among people under the age of 50. Among women, 12 of 36 countries (all from Asia and Europe) had an increase in colon cancer incidence, and seven countries had a decrease; India had the most significant growth, followed by Slovenia [12].

Information regarding CRC in Libya is limited. Elzouki et al., in a local study conducted in Benghazi city found no significant difference between gender and location or types of CRC. The majority of CRC patients in Benghazi were diagnosed at late stage of the disease either in locally advanced or metastatic stage [13]. The aim of this study was to investigate the epidemiologic features of CRC in Libya, using data from cancer registry.

METHODS

Study design and setting

A retrospective descriptive cross section study was conducted in the oncology outpatient department in Zliten Medical Center, Libya. Data provided by medical records for oncology patients diagnosed with CRC in Zliten city during the year of 2022 were obtained. Ethical approval was obtained from the hospital authority.

Data analysis

Data obtained were entered the SPSS software version 22, and were analyzed by using t-test. A P value of less than 0.05 were considered significant.

RESULTS

In figure 1, about 48% of CRC were within the age range 45 to less than 65 years old, followed by 32% with age group of 65 and younger than 85, 16% were within the age group greater than 25 and younger than 45, and the last category, whose age is greater than 85, was 4%. Males 58.7% were more affected with CRC than females 41.3% (Figure 2).

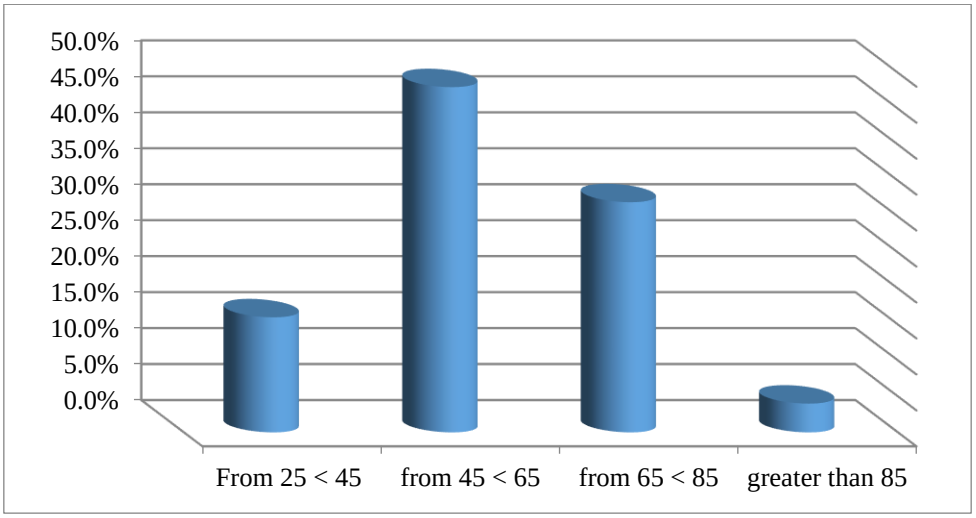

Figure 1. Distribution of CDC patients based on age

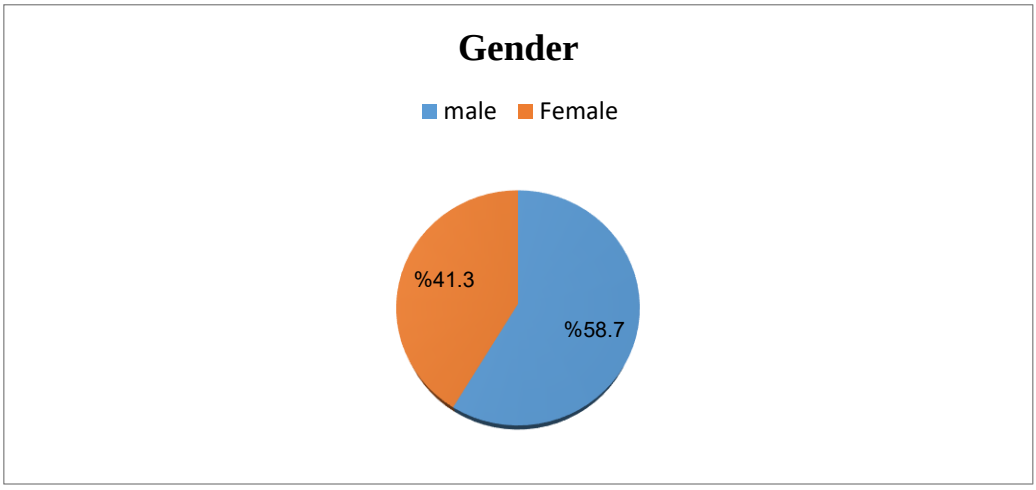

Figure 2. Distribution of CDC patients based on gender

Table 1 exhibited data obtained from CRC patients. It shows that adenocarcinoma representing 96% of the histopathological types of the tumor, followed by adenoma with dysplasia, gelatinous carcinoma, and Tubulovillous adenoma (1,33% for each).

The most common CRC symptoms were 21.3% abdominal pain, followed by 18.66% suffer from intestinal obstruction, 10.02% with rectal bleeding, 9.33% weight loss, 9.3% abdominal mass, 6.7% suffer from lower back pain, 5.3% suffer from generalized fatigability, 5.29% with anemia, 4.0% recurrent retro-peritoneal abscess, 4.0% suffer from diarrhea, 2.7% suffer from chronic constipation, and 1.3% suffer from intestinal perforation.

About 62,67% of patients diagnosed with rectosigmoid cancer, 22.7% with right side colon, 9,33% had a sigmoid colon cancer, and 5.3% suffer from anal canal cancer. Around 25(33.3%) of cases suffering from liver metastasis, while there are 50(66,6%) cases shows no metastasis.

Almost 70.7% underwent surgery, 14.7% underwent chemotherapy, 10.7% undergone neoadjuvant treatment, 2.7% underwent palliative chemotherapy, and 1.3% underwent radiation therapy. About 40 cases did not recur from the cancer while 35 cases had recurrences treatment.

Table 1. Clinical data of the included CRC patients

CRC results	Count	Percentage	P values
Histopathology results			
Adenocarcinoma	72	96%	
Adenomatous polyp + Dysplasia	1	1.33%	0.45
Highly diff. gelatinous carcinoma	1	1.33%	
Tubulo Villous adenoma	1	1.33%	
Presentation			
Abdominal mass	7	9.3%	
Abdominal pain	16	21.3%	
Anemia	4	5.29%	
Bleeding per rectum	9	10.02%	
Chronic constipation	2	2.7%	
Diarrhea	3	4.0%	0.44
Generalized fatigability	4	5.3%	
Intestinal obstruction	14	18.66%	
Intestinal perforation	1	1.3%	
Lower back pain	5	6.7%	
Recurrent retro-peritoneal abscess	3	4.0%	
Weight loss	7	9.33%	
Site of pathology			
Anal canal	4	5.33%	
Rectosigmoid	47	62,67%	0.36
Rt side colon	17	22.67%	
Sigmoid colon	7	9.33%	

Metastasis			
Liver metastasis	25	33.4%	0.33
No metastasis	50	66.6%	
Treatment option			
Surgery	53	70.7%	
Chemotherapy	11	14.7%	
Radiation therapy	1	1.3%	0.48
Palliative chemotherapy	2	2.7%	
Neoadjuvant chemotherapy	8	10.7%	
Recurrence			
No	40	63%	0.47
Yes	35	37%	

DISCUSSION

Colorectal carcinoma (CRC) is the third most common cancer and fourth major cause of death from cancer worldwide. This carcinoma affects both males and females but males being affected more than females [14]. The current study represents the epidemiological features of CRC seen in Zlitan city, and exhibited a sex male to female ratio was (1.4:1), which was comparable to that obtained from a previous study in Libya [13]. The age factor is a very important factor in CRC, and previous studies show an increased incidence of colorectal cancer above age 50 [15,16]. In agreement to this finding, our study shows that the most age category affected by CRC was 45 – 65 years (48%).

The current study supports the western information that over 80% of CRC affect people older than 50 years [17,18]. This means that also in Zlitan city, CRC is a disease affects both middle aged and elderly population, these data should not make a physician to miss or ignore a young patient presented with GI symptoms, as there is a significant ratio of young patients had CRC.

Adenocarcinoma was the most common histopathological type of colorectal cancer in the current study, and this finding aligned to a study of United States in which similar findings (96%) were observed [19]. Another study from Iran had results comparable to ours with 95% of the patients having adenocarcinoma [20].

In our study 18,6% of studied cases presented with intestinal obstruction, it is comparable with other studies (15-29%) [21], this indicates that a significant percentage of our patients presented late, may be due to lack of screening programs, or patient factors like cost effectiveness, ignorance of the symptoms, Abdominal pain represent the main complain in our study (21.3%). This comes in accordance with a study by Batool et al [22] in which Abdominal pain was the most communal presentation of the patients other presenting symptoms of the patients (90%).

According to site of pathology, the most frequent tumor site found in our study was recto sigmoid colon in 62,67% of patients followed by right side colon (cecum) in 22.7% and 9.33 % had sigmoid colon involved. These results are alike to a cohort by Schmuck et al [23] which reported sigmoid colon as the most frequent site involved in CRC. Contrary to our study, where only 11% had rectal involvement, a study in Iran conveyed that almost 45% of cases had rectum involved [20].

It is well known that left side colon cancer is more common than right side globally, however the incidence of right-side colonic cancer is increasing in some areas of the world, in north America and Europe [24-27]. The same also in Asian countries [28]

According to distant metastasis, we found that there are 25 cases suffering from liver metastasis, while there are 50 cases of no metastasis. It was found that there is no family history for the same disease that the patient suffers from, and there are cases where the private file was not found. In a study by Batool et al [22], disease metastasis was not found to be affected by patient's age, gender, marital status, family history and CEA level.

In our study, according to type of intervention, 70.7% underwent surgery, 14.7% underwent chemotherapy, 1.3% underwent radiation therapy, 2.7% underwent chemotherapy, and 10.7% undergone Neoadjuvant treatment. And according to recurrence we find that 40 cases did not recur and 35 cases had recurrences. This partially agrees with a study by Batool et al [22], in which surgery with adjuvant chemotherapy was the treatment used in 80 (45.9%) of the cases. These data and other data support the need for adaptation of a screening program, especially when comparing with national mortality rate, for early detection of the disease, a lot of barriers prevent this program, including the cost, lack of availability, people unawareness of the disease, lack of educational programs, Currently, there is no sufficient epidemiological data in Libya to support starting of screening at a lower age group [29].

CRC screening is not done neither in general nor in selected high-risk patients, and cases are considered individually mainly based on the symptoms and/or signs of suspected CRC. This fact as well as lack of awareness in Libyan population of the importance of screening could explain why the majority of CRC cases in this study were diagnosed at

the end stage of the disease. In some areas of Libya, particularly in the large cities, people have more access to specialized centers and may be screened by their own physicians but it is not always the case.

CONCLUSION

Colorectal cancer is a disease of non-specific symptoms. This study could serve as a blueprint to raise awareness about the need for earlier screening for CRC and the necessity for promoting healthier lifestyle choices as primary prevention. A national CRC prevention program needs to be developed to address this problem, while taking into consideration necessary measures to overcome the different challenges that might face such programs in developing countries like Libya. It is suggested to integrate the national CRC prevention program at the primary care level i.e. through the primary health care centers distributed all over the country. Moreover, advocating for the coverage of screening tests by private insurances and other third-party payers in the country, would lead to improvements in the screening of CRC and other types of cancer. Finally, it is important to join efforts among relevant to develop a more comprehensive and complete cancer database.

Conflict of Interest

There are no financial, personal, or professional conflicts of interest to declare.

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المظاهر الوبائية لسرطان القولون والمستقيم في مدينة زليتن، ليبيا

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المستخلص

الخلفية والأهداف. يعد سرطان القولون والمستقيم (CRC) أحد أكثر أنواع السرطان شيوعًا في جميع أنحاء العالم. كان الهدف من هذه الدراسة هو دراسة السمات الوبائية لسرطان القولون والمستقيم في مدينة زليتن، وذلك باستخدام البيانات المتوفرة في قسم الأورام في العيادات الخارجية. **طُرق الدراسة.** تم إجراء دراسة وصفية بأثر رجعي مقطع عرضي لتمثيل السمات الوبائية لمرض CRC في مدينة زليتن في ليبيا. **النتائج.** كان الذكور أكثر تأثراً بـ CRC من الإناث. حوالي 48٪ من حالات CRC كانت ضمن الفئة العمرية من 45 إلى أقل من 65 عامًا، تليها 32٪ في الفئة العمرية 65 عامًا وأقل من 85 عامًا. عادة ما يعاني المرضى الذين يعانون من CRC من انسداد معوي. يمثل السرطان الغدي 96% من الأنواع النسيجية المرضية للورم، وكان أكثر شيوعاً في الوصل المستقيمي السيني. كانت الجراحة هي العلاج الرئيسي لسرطان القولون والمستقيم، يليها العلاج الكيميائي والعلاج الإشعاعي. تعتبر الخزعة بمثابة خطوة رئيسية في تشخيص سرطان القولون والمستقيم. **الخاتمة.** CRC هو مرض ذو أعراض غير محددة. يُنصح برفع مستوى الوعي حول الحاجة إلى الفحص المبكر لـ CRC وضرورة تعزيز خيارات نمط الحياة الصحية كوقاية أولية.

الكلمات الدالة. سرطان القولون والمستقيم، الأورام، العلاج الكيميائي، زليتن.