

Colorectal Cancer in Aljabal Alakdar area, east Libya: An overview of five-years cancer incidence

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ABSTRACT

Purpose: To assess the incidence of colorectal cancer cases in the Aljabal Alakdar area, east Libya, and identify high-risk population to facilitate early detection and improve survival outcomes. **Methods:** The data was collected retrospectively in cross-sectional, during five-years from January 2019 to December 2023, from patients' files in the oncology department of Benghazi Medical Center and Albeida Hospital (hospital-based). **Results:** In the five years between 2019 and 2023, 186 patients with colorectal cancer were reported in the Aljabal Alakdar region, east Libya. Ninety cases were male, while ninety-six cases were female. Males (N=20) had a higher incidence of rectal cancer than females (N=13) (P value = 0.05). The average age was 60.88 ± 13.35 ($P = 0.665$). The most common presentation observed among patients at the time of diagnosis was chronic constipation and abdominal pain as complications of intestinal obstruction by large masses, while 23% of cases were asymptomatic. **Conclusion:** Colorectal cancer incidence has seen a notable increase over the last two years (2022 and 2023). A significant portion of the detected cases were asymptomatic and elderly, which indicates the importance of activating screening programs focusing on patients over 50 years of age or those with familial colorectal cancer. Also increasing people's knowledge about the benefits of early discovery in improving the prognosis.

Keywords: Colorectal, Screening, Adenocarcinoma, Increased, Old, Asymptomatic.

INTRODUCTION

Globally, colorectal cancer is the second leading cause of cancer-related death for both men and women and the third

most frequent type of cancer overall. Around 1.9 million new cases of colorectal cancer and over 900,000 colorectal cancer related deaths were reported in the 2020 World Health Organization (WHO) cancer report.[1] The incidence has decreased over the past 30 years because of changes in risk factors, e.g., decreased smoking, and early detection. However, the number of colorectal cancer cases in patients younger than 50 years has steadily increased for unknown reasons. The survival rate exceeds 90% with localized disease, underscoring the importance of screening for early detection and improving the prognosis.

In North Africa, Libya has the highest percentage of colorectal cancer with statistics closer to European records, [2] absence of a reliable national date in the last ten years; therefore, most of our reports were derived from cancer registries in the neighbouring countries. Between January 2007 and December 2009, a total of 152 patients with colorectal cancer (CRC), 84 of whom were male (55%) and 68 of whom were female (45%), with a male-to-female ratio of 1.2:1.0, were recorded in the oncology division of central Benghazi Hospitals.[3] In eastern Libya, 174 individuals were diagnosed with colorectal cancer (CRC); their mean age was 58.7 (± 13.4) years, with 51.7% ($n = 90$) being male and 48.3% ($n = 84$) being female during 2012. [4] Over the course of ten years (2004–2014), 468 cases (261 men and 207 females) of colorectal cancer were detected in West Libya, 42% of patients consumed a lot of red meat, processed foods, and fried potatoes, whereas 34% of patients ate insufficient amounts of vegetables and a fiber-rich diet. Hereditary non-polyposis colon cancer and familial adenomatous polyposis are two hereditary genetic abnormalities that can cause colorectal cancer, and they were linked to 24% of cases.[4] The majority of the diagnosed (90%) men were heavy

smokers. The most observed complains of CRC cases were abdominal pain (21.3%), followed by intestinal obstruction (18.66%), some cases suffer from rectal bleeding (10.02%), weight loss (9.33%), abdominal lump (9.3%), anemia (5.29%), diarrhea (4.0%), chronic constipation (2.7%) and intestinal perforation (1.3%).[5]

THE AIM OF THE STUDY

To assess the incidence of colorectal cancer cases in the Aljabal Alakdar area, east Libya, and identify high-risk population to facilitate early detection and improve survival outcomes. It is expected that the information obtained will add to our knowledge in this field and will help in the management and planning.

MATERIALS AND METHODS

The data was collected retrospectively in cross-sectional, during the five-years from January 2019 to December 2023, from patients' files in the oncology department of Benghazi Medical Center and Albeida Hospital (hospital-based). The study was conducted in accordance with ethical guidelines and approved by the Research Ethics Board (REB).

Data extraction : The data obtained by using a standardized questionnaire by two independent reviewers. Information was extracted from patient files, which included age, gender, date of diagnosis, tumor site, symptoms present at the time of diagnosis, and details of histopathology reports.

Inclusion and exclusion criteria: The study focused on Libyan patients aged 18 years and older with histologically confirmed carcinoma, while patients under 18 years of age, non-Libyan patients, and cases lacking histological confirmation or presenting unclear carcinoma features were excluded.

Statistical analyses were performed using SPSS (IBM SPSS for Windows, Version 21.0). This included chi-square tests to calculate p-values, as well as generating graphs and conducting additional statistical evaluations.

RESULTS

The number of patients with CRC was 186 recorded in the five years in Aljabal Alakdar area, east Libya, during the years 2019 to 2023; most of them were diagnosed in 2022 and 2023. (Figure 3) Ninety cases were male, while ninety-six cases

were female (P value = 0.05). Males (N=20) had a higher incidence of rectal cancer than females (N=13). (Table 1) The average age was 60.88 ± 13.35 , and the median = 62.00 years. The number of cancer cases was greater among those aged "45-55"; the data also shows the association between age group and sex (P value = 0.665). (Table 2)

The majority of tumors were detected in the terminal part of the colon (sigmoid), followed by the rectum, and a few cases were raised from the end of the small bowel (ileocecal) and appendix. (Figure 2) The most common presentation observed among patients at the time of diagnosis was chronic constipation, abdominal pain, and distention as complications of intestinal obstruction by large masses, while 23% of cases were discovered accidentally without obvious symptoms. (Figure 4) On basis of histopathology, an adenocarcinoma of the colon with moderate differentiation represents 89% of examined biopsies, followed by mucinous carcinoma, gastrointestinal stromal tumors (GIST) and neuroendocrine (carcinoid) tumors. (Table 3) Signet cell carcinoma, a poorly differentiated adenocarcinoma was recorded in two colon cancer cases that were characterized by aggressive clinical pictures and a bad prognosis when discovered lately.

Table 1: Relationship between different anatomical sites of tumors and sex:

Sex	Colon No (%)	Rectum No (%)	Ileocecal No (%)	Appendix No (%)	Total No (%)	P value
Male	63 (44.1%)	20 (58.1%)	6 (85.7%)	1 (33.3%)	90 (48.4%)	0.05
Female	80 (55.9%)	13 (41.9%)	1 (14.3%)	2 (66.7%)	96 (51.6%)	
Total	143 100.0%	33 100.0%	7 100.0%	3 100.0%	186 100.0%	

Table 2: Age category of colorectal cancer cases:

Age category in year	Both sex	Male	Female	Percent	P value
<= 45	20	9	11	10.7	0.665
46 – 55	49	23	26	26.3	
56 – 65	46	21	25	24.7	
66 – 75	46	24	22	24.7	
76 – 85	20	12	8	10.7	
86 – 95	5	1	4	2.6	
Total	186	90	96	100.0	

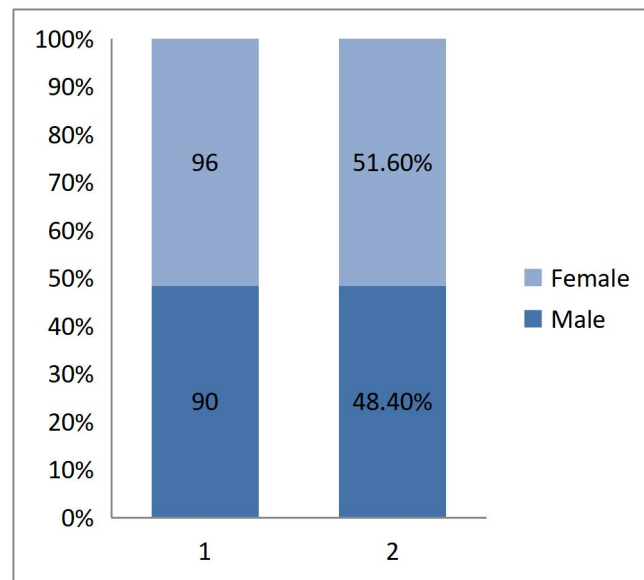


Figure 1: Sex of colorectal cancers cases from Aljabal Alakdar area, east Libya.

Table 3: Type of colorectal cancer on basis of histopathology:

Cancer type	Frequency	Average age	Percent
Adenocarcinoma	166	62.00 + 13.33	89.4
Mucinous carcinoma	7	69.29 ± 10.71	3.8
Carcinoid tumor	4	54 ± 8.48	2.2
Lymphoma	5	54.5 ± 8.48	2.4
GIST	4	79.25 ± 2.21	2.2
Total	186	60.88 ± 13.35	100

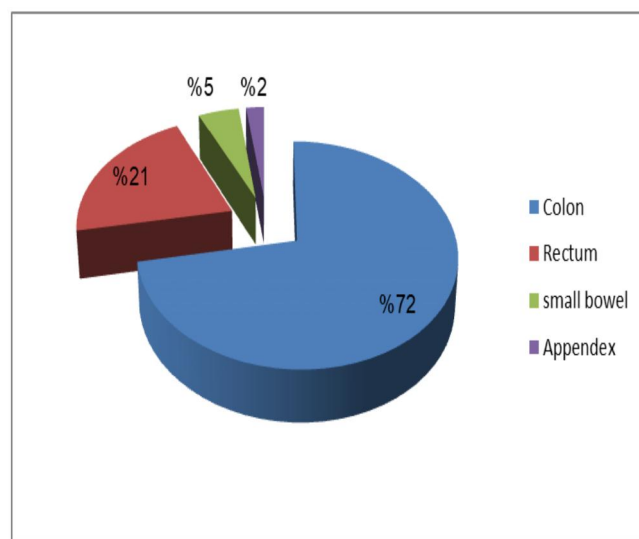


Figure 2: Site of cancer in relation to bowel regions.

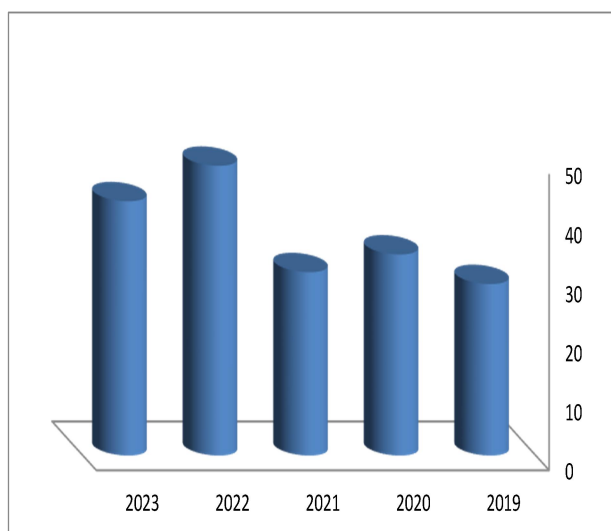


Figure 3: The years of diagnosis of colorectal cancer.

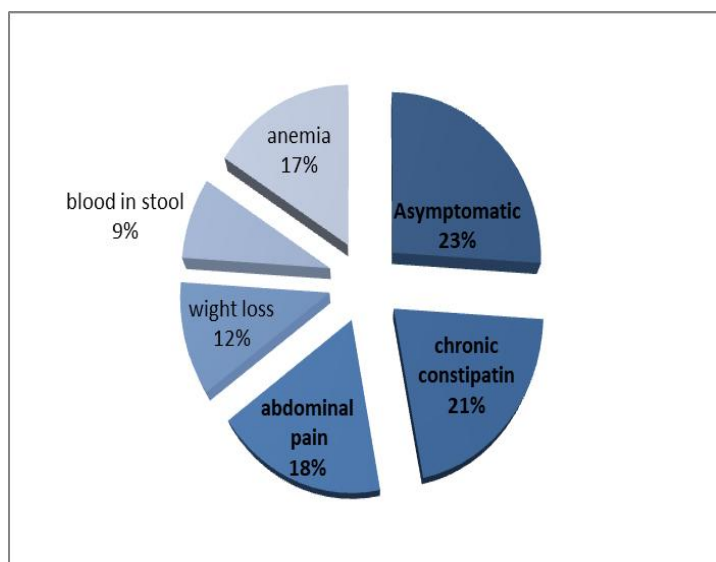


Figure 4 : Symptoms and signs were presented at time of diagnosis.

DISCUSSION

Our study concentrating on colorectal cancer incidence in east Libya, it is regarded as the second most prevalent cancer, following lung cancer in men and breast cancer in women, which is similar to results reported in southern and west Libya [9][10]. In Libya, colon cancer is ranked as the second most common cause of death. [6] The results show an increase in the incidence in the last two years (2022 and 2023) in comparison

to the last decade, which is explained by the improvement of diagnostic methods that help in the discovery of disease in asymptomatic patients as well as cancer detection was greatly affected in last 2019 and 2020 due to COVID-19 pandemic lead to underestimation of colorectal cancers. [11]

As expected, the weakness of the screening program in our diagnostic facilities leads to an underestimation of colorectal cancer cases, especially in the eastern part of Libya. The results in the current study meet with previous reports published in 2007–2009 from Benghazi hospitals, except that they show females had less cancer than males, which is against our results [3], while the average age was similar to the report from west Libya. [4]

More than 90% of CRC are adenocarcinomas [7] that arise mainly from the sigmoid part of the colon and rectum, which corresponds with our current study, but we found that moderate differentiation adenocarcinoma (Grade 2) forms 89% of colorectal tumors, followed by well differentiation (Grade 1). [8] Microscopic examination of resected colonic masses after colectomy is more informative than endoscopic biopsy and gives additional information about the type of cell, invasion of the lymphatic system and dissemination to local lymph nodes. In the present study, the majority of patients were symptomatic while 23% of cases were discovered accidentally without obvious symptoms which indicates the importance of screening the risky people and those with family history by colonoscopy, [12] which is neglected in our hospital and primary health care. Also, there is a lack of educational programs about bad habits like smoking that contribute to the pathology of cancer. [13] This study has its limitations, such as some patients having no medical files in national hospitals because they received their medical care outside Libya, as well as a lack of files with full information; mainly, the symptoms and signs were presented at the time of diagnosis that helped to discover the cancer. Our study demonstrates that 21% of patients suffer from chronic constipation, which is a cardinal sign of colonic obstruction, caused by a growing mass and abdominal pain. Anemia was reported in 17% of colorectal cancer cases, which corresponds to a previous study done in 2013, which showed 31% of CRC had microcytic anemia (MCV less than 83) and 18% had normocytic anemia. [14]

CONCLUSION

Colorectal cancer incidence has seen a notable increase over the last two years (2022 and 2023). A significant portion of the detected cases were asymptomatic and elderly, which indicates the importance of activating screening programs focusing on patients over 50 years of age or those with familial colorectal cancer or familial adenomatous polypos.

RECOMMENDATIONS

- Implement targeted screening programs for individuals aged 50 and older, or those with a family history of colorectal cancer or familial adenomatous polyposis.
- Foster awareness regarding the benefits of early detection through diagnostic methods such as colonoscopy and fecal immunochemical testing (FIT).
- Establish specialized research centers focused on genetic conditions associated with colorectal cancer, with support from governmental funding.

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