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*Original article*

# Clinical and Demographic Profile of Colorectal Cancer: One Year Experience of National Cancer Institute, Misrata, Libya

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## Abstract

***Background and aims****. Colorectal cancer is a major cause of mortality and morbidity throughout the world and the incidence is increasing in developing countries including Libya. The aim of this study was to analysis the demographic parameters as well as clinical and pathological features of colorectal cancer among the Libyan patient in National Cancer Institute (NCI), Misrata, Libya.* ***Methods****. A retrospective cross-sectional study where all colorectal cancer cases from January 2013 to December 2013 presented to Surgical Oncology Department of (NCI) were reviewed. The records of subjects were analyzed for information on their demographic, clinical and pathological parameters.* ***Results****. A total of 47 cases of colorectal cancer were identified. Their mean age was 53.5±13.28 year and ranged from 27- 80 years. About 87% of the patients were over 40 years old. There were 22 males (47%), and 2% of the cases showed positive family history of cancer. The major clinical symptoms presented were; constipation (30%), per-rectal bleeding (26%) and abdominal pain (15%). Majority of the patient presented with recto-sigmoid cancer 38 (80%). The Rectum and Sigmoid were the most common anatomical sites for colorectal cancer (19 cases each, 40.4%), followed by Cecum 4 (8.5%), hepatic flexure 4 (8.5%) and descending colon 1 (2.1%). Adenocarcinoma was the main histopathological diagnosis in all patients; majority showed moderate differentiation 25 (53%). According to tumor node metastasis (TNM) staging of cancer, majority of the patients 32 (68%) were in late stage (M1) and liver was the most common metastatic site (80%).* ***Conclusion****. Our cohort showed that there is middle age predominance with slightly higher incidence among females, distal colon disease and obstructive symptoms were main presenting complaints, and late staged presentation among colorectal cancer patients.*

***Keywords:*** *Clinical, Colorectal Cancer, Libya.*

## Introduction

Cancer is one of the most common pathological problems in the world particularly in western countries. More than 1 million new cases worldwide. Colorectal cancer (CRC) is contributing to 13% of all cancers [1-3]. It is well known that the colon cancer more frequently in male than female patients, and its prevalence increases with age in both genders. Over thirty percent of patients with CRC are over the age of 70 in the Western world [1-6]. The term colorectal cancer refers to slowly developing cancer that begins as a tumor or tissue growth on the inner lining of the rectum or colon [7]. 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 grows into blood vessels or lymph vessels, increasing the chance of metastasis to other anatomical sites [7,8]. Of the cancers that begin in the colorectal region, the vast majority (over 95%) are classified as adenocarcinomas [7]. These begin in the mucus-making glands lining the colon and rectum [7,9]. Colorectal carcinoma (CRC) is the most common malignancy of gastrointestinal tract. It is the second most common cancer in males and fourth in females [10]. In developed countries incidence varies from 50-60/100000 population [11]. The risk of developing colorectal carcinoma increases with age [12]. It has been seen that about 90% of new cases are diagnosed in patients over 50 years of age [13]. The literature suggests that there is a gradual shift of colon cancer towards right [14]. The aim of this study was to analysis the demographic: Age, gender and Family history. Clinical: main presenting complaint. Pathological aspects: site, Histopathology and staging of colorectal cancer among the Libyan patient in NCI.

**Methods**

The present study is one-year (2013) retrospective analysis of the data of patients diagnosed with colorectal cancer who were admitted and managed at the Department of Surgical Oncology, National Cancer Institute (NCI), Misrata, Libya from January through December 2013. The data were retrieved from the patient files, as well as from pathology department and Operating theatre records.

Patient's age, gender, clinical presentation, location of cancer involvement, and histopathologic diagnosis were reviewed. Tumor staging was carried out using tumor node metastasis (TNM) staging of cancer and according to Astler Coller modification of Duke's system, dividing it into stage A to C depending upon the extent of local involvement and regional node spread. Stage D was added to account for distant metastasis (M) in accordance with Turnbull modification.

The descriptive statistics were reported as mean (average) for continuous variables, frequencies and percentages for categorical variables and (n) for numbers. Data were statistically evaluated with R Statistical Soft Ware [15], and Microsoft Excel 2010. P-value less than 5% was considered significant.

**Results**

A total of 47 cases of colorectal cancer were identified (22 males, 47%). Their mean age was 53.5±13.28 year and ranged from 27- 80 years. The age distribution is shown in Figure 1. The peak incidence was observed in patients aged between 40 and 49 years. The majority of cases (41 patients, 87%) was in the age group above 40 years and only 6 patients (13%) were aged less than 40 years ($p<0.01$). Family history of colorectal cancer was positive in 2% of patients.

The main clinical symptom was constipation (14 patients, 30%), and others with per-rectal bleeding (26%), abdominal pain (15%), Anemia (9%), jaundice and weight loss (6%) (Figure 2).

The site of Tumor is shown in Table 2. Majority of the patient presented with recto-sigmoid cancer 38 (80%). The Rectum and Sigmoid were the most common anatomical sites for colorectal cancer (19 cases each, 40.4%), followed by cecum 4 (8.5%), hepatic flexure 4 (8.5%) and descending colon 1 (2.1%).

Adenocarcinoma was the main histopathological diagnosis in all patients (100%); majority showed moderate differentiation 25 (53%). According to tumor node metastasis (TNM) staging of cancer, majority of the patients 32 (68%) were in late stage metastasis (M1), whereas 9 patients (19%) in early stage metastasis (M0) ($p<0.001$). Liver was the most common metastatic site (80%), both liver and lung in (7%) and Peritoneum in (13%) as shown in Figure 3.

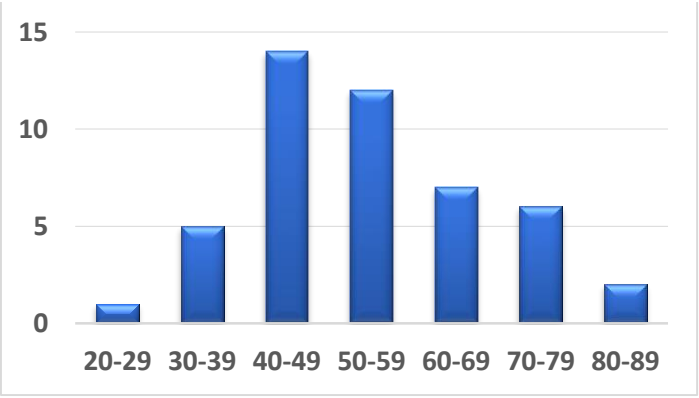


**Figure 1. Distribution of age at diagnosis**

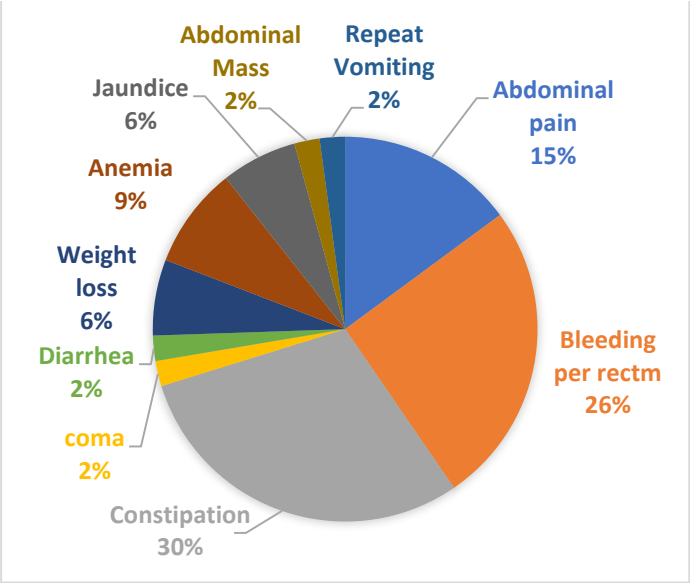


**Figure 2. Distribution of main presenting symptoms**

**Table 1.Site of Colorectal cancer.**

| Site of tumor | Count | Percent |
|---|---|---|
| Rectum | 19 | 40.4% |
| Sigmoid | 19 | 40.4% |
| Cecum | 4 | 8.5% |
| Descending colon | 1 | 2.1% |
| Hepatic Flexure | 4 | 9.0% |

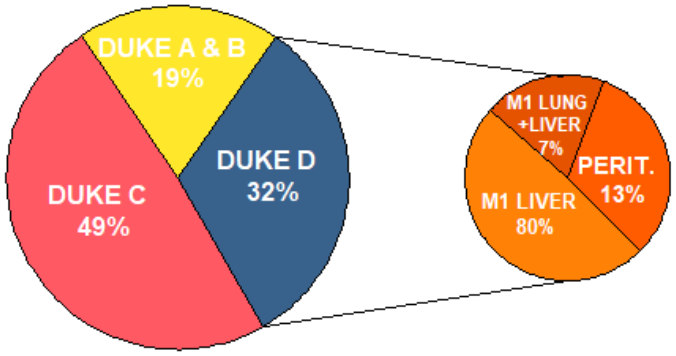


**Figure 3. Staging**

**Discussion**

The clinicopathological patterns of colorectal cancer have been reported to vary in different geographical regions. The occurrence of colon cancer in Libyan population is age related with nearly 65% of cases arising in patient who are 50 years or older [16]. With contrast to European countries; colon cancer is a rare before the age of 40, with 90% of cases occurring after age 50 years [17,18]. Recent reports showed that, in the USA, it was the most frequent form of cancer among persons aged 75 years or older [6,8]. In the present study, the majority of cases was in the age group above 40 years which is comparable also to many reports from developed countries [9]. The mean age of our patients at the time of diagnosis was 54 years.

In the western world, colorectal cancer is a disease of older patients, with most being diagnosed after the age of 50 years [14], whereas colorectal cancer in African population tends to present at a young age with advanced aggressive disease and associated poor prognosis [13].

In this retrospective study, we review the clinicopathological patterns and presentations of colorectal cancer at National Cancer Institute. The mean age of participants (53.5 years) reported in this study is similar to findings in other African studies which reported mean ages of 53 year in Nigeria [17], 58.8 years in Tunisia [18], 58 years in Ghana [19], 50 years in Central Sudan [20], 50.8 years in Burundi [21], and eastern Libya [22]. Most studies in Africa show average ages between 43 and 46 years [23-25]. However, the mean age described in this study is younger than the age described in most developed countries [26,27]. In the United States, from 2003-2007, the median age at diagnosis was 70 years [26]. The peak age of presentation in this study was in the age range 40-49 years (26.2%) which coincides with a retrospective study by [28].

The probability of being diagnosed with colorectal cancer increases after 40 years of age, rises progressively from 40 years and sharply after age 50 [29]. All these data reflect that, colorectal cancer in Libya and Africa is more common in the young than in Western countries. The majority of patients presented with symptoms of constipation (30%), Per-rectal bleeding (26%), abdominal pain (15%), anemia (9%), jaundice (6%), weight loss (3%), vomiting (2%), Coma (2%), Abdominal Mass (2%), Repeated vomiting (2%) and Diarrhea (2%). In a study by [19] in Accra, Ghana, bleeding per rectum was the commonest symptom which concurs with studies in other developing countries [30]. The most frequent Libyan colorectal cancer is located at rectosigmoid region. This is in line with other previous studies which show about 40% of large bowel cancers occur in rectum and rectosigmoid area. Adenocarcinoma was the most common histological type (100%) with moderately differentiated tumors accounting for 60% of the cases. These findings are in agreement with studies by [18,24] who reported similar histopathological patterns.

**Conclusion**

Colorectal cancer in our cohort is affected women like men and has no age predilection and is dominantly seen in older age group. Adenocarcinoma was the most common type and the disease usually presents in late stage. The present study could be used in our hospital setting as a baseline data for further research studies. Furthermore, to increase the health education and raising awareness about cancers and widespread implementation of screening program which can lead to early detection and significantly improve the outcome.

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