

Colon Versus Rectal Cancers among Surgical Approach: An Observational Study

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1. Abstract

1.1. Background: Colorectal cancer is the most common tumor of the gastrointestinal tract, and it is the third leading cause of mortality throughout the world.

1.2. Objectives: An observational study of colorectal cancers.

1.3. Methods: The research was carried out in Abu Ghraib General hospital in the period from January 2019 to May 2019. The primary data reported included colorectal cancer, and patients study characterizes. These including gender, age, family history, smoking, comorbidity, IBD, tumor sites, histopathology, stages, grading, the distance for anal verge, local recurrence, distant metastasis, type of surgery, and chemoradiation.

1.4. Results: The gender was composed of male 40%, and female 60%, with mean age, was 44.89 ± 21.6 years for males and 47.55 ± 20.07 years for females. There was only 4% had a positive family history. Smoking patients in this study were 48%, yet the non-smoker patients were 52%. Rectosigmoid cancer represented the most common site of cancer figured in 40% of patients. The results showed that adenocarcinoma was the most common histopathology in 72% of patients. The localized tumors were recorded in 44%, whereas metastasis was found in 34% of patients. Regarding grading, the moderate differentiation was the dominant grade in 60%. The tumor distant from anal verge results exhibited as <5 cm in 7(14%), 5-10 cm in 30(60%), and >10 cm in 13(26%). The majority of patients in

our study have no metastatic disease 66%. Indeed, the hepatic was the most frequent site of distant metastasis. All patients underwent different surgical procedures.

1.5. Conclusions: Middle age group was mostly effect and more in the female gender. Many factors are shown to increase the risk of developing colorectal cancer including increasing age; consumption of processed meat, and smoking. Rectosigmoid cancer represented the most current sites. The localized diseases were common. Moderate differentiation was the dominant grade. The tumor location and the distal tumor margin are essential factors upon which the surgical plan for patients with rectal cancer is based. Accurate measurement of the distal tumor margin is necessary for planning the surgical procedure. The liver was the most frequent site of distant metastasis that figured.

2. Introduction

The highest colon cancer incidence rates are found in parts of Europe (eg, in Hungary, Slovenia, Slovakia, the Netherlands, and Norway), Australia/New Zealand, Northern America, and Eastern Asia (Japan and the Republic of Korea, Singapore [in females]), with Hungary and Norway ranking first among males and females, respectively [1]. The incidences are elevated in Uruguay among both men and women. Rectal cancer incidence rates have a similar regional distribution, although the highest rates are seen in the Republic of Korea among males and Macedonia among females [1]. Rates of both colon and rectal cancer incidence tend to be low in most regions

of Africa and Southern Asia [1-3]. Colorectal cancer incidence rates vary widely, with 8-fold and 6-fold variations in the colon and rectal cancer, respectively [1]. Globally, colorectal cancer is the second most common malignancy in western countries, with approximately 18,000 patients dying per annum in the UK. The rectum is the most frequent site involved [2].

Over 1.8 million new colorectal cancer cases and 881,000 deaths are estimated to occur in 2018, accounting for about 1 in 10 cancer cases and deaths. Overall, colorectal cancer ranks third in terms of incidence but second in terms of mortality. Colorectal cancer incidence rates are about 3-fold higher in transitioned versus transitioning countries; however, with average case fatality higher in lower HDI settings, there is less variation in the mortality rates [1].

In 2011 recorded 1086 cases of colorectal cancer by the Iraqi Cancer Registry (ICR), as 5.3% of most ten cancer types in Iraq, whereas in 2015 the ICR recorded 1454 patients as 5.7% [4, 5].

The primary therapy for potentially curative colorectal cancer is surgery [2, 6-7]. Curative surgery should excise the tumor with wide margins and maximize regional lymphadenectomy such that at least 12-15 lymph nodes are available for pathologic evaluation [2, 6].

In this cross-sectional study, we try to the comparison between colon and rectal cancers among surgical approaches with relation to the patients, and cancers variables.

3. Methods

3.1. Study Setting and Design

The research process was an observational study carried out in Abu Ghraib General hospital at the period from January 2019 to May 2019.

3.2. Data Extraction and Collection

The primary data reported included colorectal cancer, and a patient's study characterizes 50 patients attending the hospital. These, including gender, age, family history, smoking, comorbidity, IBD, tumor sites, histopathology, stages, grading, the distance for anal verge, local recurrence, distant metastasis, type of surgery, chemoradiation details of neoadjuvant and adjuvant therapy.

3.3. Statistical Analysis

All data collected were entered into the excel sheet folder, transferred then for statistical analysis into a file of Statistical Package for Social Sciences version 24 (SPSS v24) (SPSS Inc., Chicago, Illinois, USA). Descriptive analysis of clinical and pathological characteristics was performed.

4. Results

The gender in our study was composed of male 40%, and female 60%, with mean age, was 44.89 ± 21.6 years for males and 47.55 ± 20.07 years for females. Regarding the age groups, we recorded 26% of patients belonged to 51-60 years as the most frequent group. There was only 4% had a positive family history. Smoking patients in this study

were 48%, yet the non-smoker patients were 52%. The comorbid company cancer found in 44%. The IBD was presented in 1% of patients.

Rectosigmoid cancer represented the most common site of cancer figured in 40% of patients. The results showed that adenocarcinoma was the most common histopathology in 72% of patients. The localized tumors were recorded in 44%, whereas metastasis was found in 34% of patients. Regarding grading, the moderate differentiation was the dominant grade in 60%. The tumor distant from anal verge results exhibited as <5 cm in 7(14%), 5-10 cm in 30(60%), and >10 cm in 13(26%).

The majority of patients in our study have no metastatic disease 66%. Indeed, the hepatic was the most frequent site of distant metastasis that was found in 14% of patients.

All patients underwent different surgical procedures. APR and TME were the prevalent two operations have done in 30%, and 26%, respectively. Chemoradiation received by all patients (Table 1).

Table 1: Patients, tumors, and treatment baseline characterizers in the study (n=50)

Variables	n (%)	
Gender	Male	20 (40)
	Female	30 (60)
Age (years) 45.7±20.88	20-30	2 (4)
	31-40	5 (10)
	41-50	8 (16)
	51-60	13 (26)
	61-70	12 (24)
	>70	10 (20)
Family history	Positive	2 (4)
	Negative	48 (96)
Smoking	Smoker	24 (48)
	Non-smoker	26 (52)
Comorbidity	Present	22 (44)
	Absent	28 (56)
IBD	Present	1 (2)
	Absent	49 (98)
Colorectal cancer sites	Rectum	15 (30)
	Anorectal	4 (8)
	Rectosigmoid	20 (40)
	Cecum	1 (2)
	Right colon	4 (8)
	Transverse	2 (4)
	Left colon	4 (8)
Histopathology	Adenocarcinoma	36 (72)
	Mucinous	6 (12)
	Signet-ring cell	2 (4)
	Undifferentiated	4 (8)
	Adenosequomous	1(2)
	Squamous	1 (2)
Stages	Localized	22 (44)
	Regional	11 (22)
	Distant Metastasis	17 (34)
Grades	Well differentiation	10 (20)
	Moderate Differentiation	30 (60)
	Poorly differentiation	5 (10)
	Undifferentiation	5 (10)
Distant from the anal verge	<5 cm	7 (14)
	5-10 cm	30 (60)
	>10 cm	13 (26)

Metastatic patterns	Liver	7 (14)
	Lung	1 (2)
	Local recurrence	3 (6)
	Bone	1 (2)
	Multiple metastases	5 (10)
	No metastases	33 (66)
Chemotherapy	Received	50 (100)
	No	0
Radiotherapy	Received	50 (100)
	No	0
Surgery	APR	15 (30)
	LAR+ loop ileostomy	1 (2)
	LAR without ileostomy	1 (2)
	TME	13 (26)
	Local excision	5 (10)
	Laparotomy	5 (10)
	No surgery	10 (20)

5. Discussion

The similarity of our results with other studies conducted in Iraq is obvious, as reported by Radhi et al., 2018 in Al-Diwaniyah [12], Alsafi et al., 2018 in Karbala [13], Alshewered and Al-Naqqash [14], Alrubai et al., in Baghdad [15], whereas different from studies conducted in Misan by Alhilfi et al., 2019 [16], and Khalil et al., 2018 in Duhok [17]. A report registered in the Iraqi cancer registry for the period 2002-2011 and in the National Cancer Hospitals between 2012 and 2014, found that male to female ratio varied from 1.17:1 to 1.28:1 [18]. Age is an essential factor for the occurrence and management of rectal cancer [7, 19].

Many factors were shown to increase the risk of developing colorectal cancer including increasing age; male sex; family history; inflammatory bowel disease; increasing height; increasing body mass index; consumption of processed meat, refined grains, starches, and sugars; excessive alcohol intake and smoking; and low folate consumption [1, 4-6, 8-10]. Of these, only increasing age, male sex, and excessive alcohol use have been associated with rectal cancer [19].

Rectosigmoid cancer represented the most current sites. This information resembling many studies outside Iraq [27, 28], whereas disagreeing with Radhi et al., 2018 [12], Alsafi et al., 2018 [13], Alhilfi et al., 2019 [16], and Khalil et al., 2018 [17] studies.

The results showed prominent adenocarcinoma as the most common histopathology. The localized stage without metastasis was found in half of the patients. The moderate differentiation was the dominant grade, followed by good differentiation, poorly, and undifferentiated. Tumors of the rectum arise in the mucosa, and virtually all (>90%) are adenocarcinomas [19]. Other histologic types include squamous cell carcinoma, melanoma, small-cell carcinoma, carcinoid, sarcoma, and lymphoma in different proportions. Most grading systems classify adenocarcinoma as well, moderately, or poorly differentiated [6, 8, 10, 19].

Mostly, the 5-10 cm distant tumor from the anal verge was the common finding exhibited. Khan et al. concluded that the distance of rectal cancer from the anal verge influenced the use of neoadjuvant treatment and ultimate R0 resection rate [20]. The tumor location

and the distal tumor margin are essential factors upon which the surgical plan for patients with rectal cancer is based. Accurate measurement of the distal tumor margin is necessary for planning the surgical procedure, even sphincter-saving resection [20].

The liver was the most frequent site of distant metastasis that figured. The large-bowel tumors invading from mucosa through the wall and beyond that, with the involvement of lymphatic vessels and lymph nodes, as well as the hematogenous spread can occur, primarily to the lung and liver [19]. Pulmonary metastasis occurred more frequently in patients with lower rectal cancer than in those with upper rectal cancer [19]. Metastases to the regional lymph nodes are found in 40% to 70% of cases at the time of resection. Venous or lymphatic invasion is found in up to 60% of cases. Rectal cancers are three times more likely to recur locally than are proximal colonic tumors because the anatomic confine of the rectum precludes wide resection margins, and the rectum lacks an outer serosal layer through most of its course. Due to the venous and lymphatic drainage of the rectum go to the inferior vena cava, it has a higher incidence of lung metastasis compared with colon cancers that more frequently recurs first in the liver [2, 19].

The surgical treatment options for tumors include the following [2, 6-11]:

- Anterior resection of the rectum: Middle and upper rectum (6 to 15 cm).
- Lower rectum (0 to 5 cm): Coloanal anastomosis, with or without a pouch, transanal excision, transsphincteric, and parasacral approaches, or abdominoperineal resection (APR).
- Total mesorectal excision (TME): Data suggest that local recurrence rates may be decreased with *en bloc* sharp dissection of the entire mesorectum at the time of tumor destruction, and this procedure has now become standard. With this type of surgery, local control rates have markedly increased. However, even with TME, the local failure rate for the pathologic node-positive disease is 21%, and adjuvant chemoradiation is still necessary.
- Combined (abdominal and perineal) excision of the rectum: This operation is still required for some tumors of the lower third of the rectum, which are unsuitable for a sphincter-saving procedure.
- Hartmann's operation: This is an excellent procedure in an old and frail patient who would not stand a lengthy anterior resection, or in whom there is concern about anal sphincter function or the viability of an anastomosis.
- Local operations: For small, low-grade mobile lesions, which are often Dukes' A (T1) tumors, local removal should be curative. For these tumors, especially in the unfit or in patients who will not accept a colostomy, local removal has been used. Such operations are only suitable for lesions

within 10 cm of the anal verge.

- Carcinoma of the caecum or ascending colon is treated when resectable by right hemicolectomy.
- Carcinoma of the hepatic flexure: When the hepatic flexure is involved, the resection must be extended correspondingly.
- Carcinoma of the transverse colon: When there is no obstruction, excision of the transverse colon and the two flexures together with the transverse mesocolon and the greater omentum, followed by end-to-end anastomosis, can be used. An alternative is an extended right hemicolectomy.
- Carcinoma of the splenic flexure or descending colon: The extent of the resection is from the right colon to the descending colon. Sometimes, removal of the colon up to the ileum, with an ileorectal anastomosis, is preferable.
- Carcinoma of the pelvic colon: The left half of the colon is mobilized completely. So that the operation is radical, the inferior mesenteric artery below its left colic branch, together with the related para-colic lymph nodes, must be included in the resection.

6. Conclusion

Middle age group was mostly effect and more in the female gender. Many factors are shown to increase the risk of developing colorectal cancer including increasing age; consumption of processed meat, and smoking. Rectosigmoid cancer represented the most current sites. The localized diseases were common. Moderate differentiation was the dominant grade. The tumor location and the distal tumor margin are essential factors upon which the surgical plan for patients with rectal cancer is based. Accurate measurement of the distal tumor margin is necessary for planning the surgical procedure. The liver was the most frequent site of distant metastasis that figured.

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