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Colorectal Cancer Epidemiology and Clinical Study in Misan: Past, Present and Future

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Abstract

Background: Colorectal carcinoma is the most common Gastrointestinal (GIT) cancer. It is the third common cancer in the world after lung and prostate cancers, and the fourth common cancer in woman after breast, lung and uterus cancers. The mortality rate of colorectal cancer is higher than other GIT cancers. This study is aimed at exploring epidemiological and clinical data of colorectal cancer in Misan province.

Methods: The study was conducted in Misan province, Iraq. The data were collected from 2013 to 2016 during which seventy one patients with colorectal cancer were examined. An epidemiological, clinical and descriptive study was undertaken, which accounted for features such as gender, age, residency, site of cancer, family history, time of onset, smoking habit, alcohol intake, cancer presentation at the time of diagnosis, disease stage and histopathology pattern in relation to the colorectal cancer.

Results: The overall prevalence of colon and rectum carcinoma was 3.75%. The age group primarily affected consisted of patients aged 51-60 years (30.99%). The gender and residency of patients did not have any effect on the incidence of cancer

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Obesity, family history, smoking habit and alcohol consumption were among the risk factors of colorectal cancer with about 42.25% of patients having a family history of cancer. The most common site of colorectal carcinoma was left colon, which accounted for 61.97% of cases.

Conclusion: A slight increase was observed in new cases of colorectal carcinoma from 2013 to 2016. Advanced stages of colorectal cancer were more common with stages IIIA, IIIB, IIIC and IV having a frequency of 12.67%, 16.90%, 19.72% and 15.49% respectively. The common histopathological pattern of colorectal cancer was moderately differentiated from adenocarcinoma (53.52%).

Keywords: Epidemiology, Cancer, Colorectal Cancer, Colorectal carcinoma; Misan

Introduction

Colorectal cancer is a condition commonly affecting the lower part of the descending colon, sigmoid colon, or/and rectum [1]. Most cases have been reported in people aged over fifty years [1]. Colorectal cancer usually grows slowly over a period of 10 to 20 years [2]. Bowel cancer develops as a small fleshy polyp on the colon or rectum. The most common type of polyp is an adenomatous polyp when one passes the age of fifty [3]. About one in four people have at least one bowel polyp [3]. About two third of all colon and rectal tumors are reported in colon and the rest in the rectum [4]. Most neoplasms are adenocarcinomas. Colorectal cancer is locally invasive but its metastatic spread before local growth may present some symptoms [3]. The most common site of colon and rectum metastasis carcinoma is the liver [2]. It represents the second most common type of cancer in women and the third in men, constituting the fourth most common cause of cancer mortality after lung, stomach, and liver cancers [5]. It is more prevalent in developed countries. The incidence of this cancer is strongly linked to age, with almost 75% of cases reported in people aged 65 and above. In United States and European Union, only about 2-8% of cases affect individuals under 40 years of age .

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In Egypt, Saudi Arabia, Philippines, and Iran, this figure is 38%, 21%, 17%, and 15-35%, respectively for the same age group [2,4,5].When a patient is suspected of colorectal cancer, a rigorous physical and examination should be performed by taking into account the medical and family history of the patient. Colonoscopy should be performed for patients to confirm the diagnosis of colorectal cancer. Surgery still remains as the definitive treatment. Both radiotherapy and chemotherapy can improve survival rates after the curative surgery [6]. The use of chemotherapy depends on the stage of disease. Drugs include capecitabine, fluorouracil, irinotecan, oxaliplatin and UFT. The common treatment regimens are FOLFOX, and FOLFIRI [6,7]. The study sets out to investigate the epidemiological and clinical data of colorectal cancer in Misan province.

Methods

Area of study: The study was conducted in Misan province, Iraq.

Duration of study: The data were collected in the period of 2013 to 2016 from Al-Shifaa Oncology Center in Missan. All data were retrieved form patients files archived at the center.

Populations: Of 1894 patients files examined, 71 with colorectal cancer referred to the center for chemotherapy and follow up.

Design of study: The epidemiological, clinical and descriptive study investigated factors such as gender, age, residency, site of cancer, family history, medical history, time of onset, smoking habit, stage of disease and histopathology in relation to the colorectal cancer.

Statistical analysis: Significance was determined by different tests to allow a comparison of the epidemiological results.

Results

Significant result

There were significant differences between patients with colorectal cancer in terms of overall prevalence, family history, cancer site,

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However, factors such as gender, residency, tobacco use, alcohol consumption and presentation of cancer were not significantly correlated with the likelihood of colorectal cancer (P >0.05).

Discussion

The overall prevalence of colorectal carcinoma was relatively low (3.75%) compared to figures reported in other countries by WHO, NIC, NICE and CRUK [1,2,4,5,8,9], which could be due to low socioeconomic status, insufficient screening, uncertain early detection, low literacy of patients, inaccurate diagnosis and unavailability of diagnostic tools, The reported rate of this cancer was higher in developed countries as US, UK, Australia, Germany, France, Italy, Spain, Canada, Japan and Turkey, which could be attributable to risky factors such as sedentary lifestyle, alcohol intake, smoking habit, obesity and excessive meat consumption [8-11]. In developing and poor countries, the incidence rate of this cancer was relatively different [9]. The studies suggested high prevalence of this type of this cancer in Jordan, Iran, Egypt and Saudi Arabia, but this figure was low in African countries [10].

According to our results, the patients that were primarily affected by this cancer were in the age groups of 40-60 (23.94%), 41-50 (30.99%) and 51 -60 (30.99), respectively. This is consistent with the results reported by studies in other parts of the world [1-3,9].

As far as the relationship between gender, residency and colorectal cancer is concerned, the patients were not significantly different, which could be due to the nature of cancer that is not affected by the gender or place of living.

Smoking habit and alcohol intake play a major role in colorectal carcinoma; however, in this study, no significant relationship was found between these two factors and colorectal

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carcinoma. This is inconsistent with studies undertaken in other parts of the countries, according to which cancer is strongly correlated with tobacco habit and alcohol intake [9,10].

According to studies in America, Europa and Asia, family history, medical history and presence of other types of cancer can increase the incidence rate of colorectal cancer [3,8,9], which was 42.25% in this study.

The most common site of colorectal carcinoma in our study was left colon, which was observed in 61.97% of patients. This could be due to the fact that left colon is anatomically circumferential. The most common site of colorectal cancer is sigmoid (25%) followed by the rectum (21%), cecum (20%), rectosigmoid junction (20%), transverse colon (15%) and ascending colon (10%) [8]. This could be attributed to reasons such as the inaccuracy of investigation methods or neglected results of colonoscopy.

Given the growing awareness of people and the development of oncology centers in our countries, we saw a slight increase in the detection of new cases of colorectal carcinoma from 2013 to 2016.

In this study, the viable symptoms presented were found in varying proportions without any significant differences.

As far as the stage of colorectal cancer detection is concerned, advanced stages (including IIIA, IIIB, IIIC and IV with a percentage of 12.67%, 16.90%, 19.72% and 15.49%, respectively) were the most common, which is in agreement with the findings of other studies in Asia, Europa and South America [5,8,9,11].

These could be attributed to late diagnosis, unavailability of appropriate screening tools and decreased awareness of cancer. Other studies in developed countries as US, UK, Australia, Canada, New Zealand, Japan, South Korea and China have suggested the diagnosis of cancer in

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early stages due to enhanced screening facilities, heightened awareness and availability of methods [8-11].

The most common histopathological pattern of colorectal carcinoma was adenocarcinoma (well, poor, moderate and undifferentiated). Among these, moderately differentiated adenocarcinoma was the most common (53.52%), which is consistent with the results of similar studies on colorectal cancer worldwide [5,8,10,11].

Conclusions

Colorectal carcinoma is the most common gastrointestinal tract (GIT) cancer in Misan population. Middle-aged groups are more susceptible to colorectal cancer. Gender and residence of patients have no role in the incidence rate of this cancer. Smoking habit and alcohol consumption are risk factors of this cancer with family history doubling the occurrence of colorectal cancer. Today, innovative ways of diagnosing new cases of colorectal cancer have been proposed. Considering different presentations of colorectal carcinoma, delayed diagnosis and management of this disease contribute to its detection in advanced stages, which bears poor prognosis. Early diagnosis of colorectal carcinoma results in enhanced management, prognosis and survival. Adenocarcinoma is the most common type of histopathology.

Table1- Criteria of colorectal cancer

Patients	**No**	**%**
Other cancers	1823	96.25
Colorectal cancer	71	3.89
Total	1894	100
Age group (years)	**No**	**%**
١٠-٢٠	1	1.41
٢١-٣٠	4	5.63
٣١-٤٠	7	9.86
٤١-٥٠	17	23.94
٥١-٦٠	22	30.99
٦١-٧٠	9	12.68
٧١-٨٠	9	12.68
٨١-٩٠	2	2.81
٩١-١٠٠	0	00.00
Total	71	100
Sex	**No**	**%**
Male	31	43.67
Female	40	56.33
Total	71	100
Residence	**No**	**%**
Rural	36	50.70
Urban	35	49.30
Total	71	100
Tobacco use	**No**	**%**
Smoking	14	19.72
Non smoking	57	80.28
Total	71	100

Alcohol intake	**No**	**%**
Positive	2	02.82
Negative	69	97.18
Total	71	100
Family history	**No**	**%**
Positive	30	42.25
Negative	24	33.80
Unknown	17	23.95
Total	71	100
Site	**No**	**%**
Right	24	33.80
Left	44	61.97
Sigmoid	3	4.23
Total	71	100
Year of Diagnosis	**No**	**%**
2013	12	16.90
2014	16	22.53
2015	19	26.77
2016	24	33.80
Total	71	100
Presentation	**No**	**%**
Abdominal pain	19	26.77
Constipation	11	15.49
Repeated vomiting	7	9.86
Bloody diarrhea	3	4.22
Refractory anemia	2	2.82
Bleeding per rectum	12	16.90
Abdominal distention	3	4.22
Systemic	14	19.72
Total	71	100

Table1- Criteria of colorectal cancer

Stage	**No**	**%**
0	2	2.82
I	8	11.27
II A	8	11.27
II B	7	9.86
III A	9	12.67
III B	12	16.90
III C	14	19.72
IV	11	15.49
Total	71	100
Histopathological type	No	%
Undifferentiated adenocarcinoma	5	7.04
Moderately differentiated adenocarcinoma	38	53.52
Poorly differentiated adenocarcinoma	8	11.27
Well differentiated adenocarcinoma	6	8.45
Poorly differentiated mucinous adenocarcinoma	6	8.45
Moderately differentiated mucinous adenocarcinoma	4	5.63
Polyp with early neoplastic change	2	2.82
Squamous cell carcinoma	1	1.41
moderately differentiated stromal tumor	1	1.41
Total	71	100