

ASSESSMENT OF QUALITATIVE COLONIC CANCER OF OVARIAN CANCER ORIGIN.

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Abstract:

Background: Colorectal cancer (CRC) has increased in the last decades, which constitutes about 10% of cancer mortality. In women and men, it becomes the second and third most prevalent cancer.

Objective: To explore the origin and factors for colorectal cancer in Iraq including age, family history, diabetes, smoking, serum carcinoembryonic antigen (CEA) as a predictor factor, stages of cancer, bowl habit, and symptoms.

Patients and methods: This study was conducted in surgical unit at Baghdad, during the period from 2003 to 2020. This is a case series study for 736 patients with colorectal cancer. The data gathered included: history of presence ovarian cancer, age, family history, diabetes and smoking, serum CEA, stages of the disease, bowl habit and symptoms. Data are presented as mean and percentage, and were analyzed by using the test of Chi square.

Results: Colorectal cancer patient ages were between 20- 50 years were the higher proportion of patients and were significantly ($p \leq 0.01$) higher than the other patients with ≥ 50 years or ≤ 25 years. Female with CRC of ovarian origin (59.5 %) were significantly ($p \leq 0.01$) higher than female patients with non ovarian origin (40.5%). Patients with family history were 31.2% of the total patients. Diabetic patients presented at 37.2%. Most of the patients had serum CEA ≥ 5 ng/mL (82.7%) and they were highly significant ($p \leq 0.001$) for serum CEA than the patients with less than 5. Stage 2 (42.3%) was significantly higher than stage 1 (15.6%), 3 (21.3%) and 4 (14.5%). For bowl habit, constipation presented 75.7% was significantly higher than diarrhea (24.3%). In addition, symptoms of bleeding per rectum (71.1%) was significantly higher than symptoms of pain was 28.9%.

Conclusion: Colorectal cancer is significant disease in Iraq with ovarian cancer origin. Middle age patients presented the highest percentage. Education of patients about bowl habit and symptoms of colorectal cancer should be applied especially constipation and bleeding per rectum.

Keywords: Colorectal cancer, serum carcinoembryonic antigen, stages of cancer, bowl habit.

Introduction:

In western countries, colorectal cancer has increased in the last decades which accounts about 10% of cancer mortality.¹ In women and men, it becomes the second and third most prevalent cancer.² In developed countries, colorectal cancer has also increased, the reason of increased mortality of colorectal cancer was attributed to population aging, dietary habit, smoking, low physical activity, and obesity.¹ In Iraq, several descriptive studies were conducted in colorectal cancer, the colorectal cancer was low but has increased in the last few years.³ The descriptive Iraqi studies of colorectal cancer included age, gender, signs, and symptoms.^{4,5} Carcinoembryonic antigen (CEA) is the most commonly tumor marker for colorectal cancer and the concentration in tumors is much higher than nonmalignant tissues.⁶ Serum CEA was still the best tumor marker as independent prognostic factor for colorectal cancer.⁷ The level of serum CEA predicts under-staging and the possibility of recurrence. According to a Japanese autopsy study, only 5.97% of metastatic colorectal cancers were of an ovarian origin⁸. Only a few cases have been reported in which ovarian cancer recurs as an intraluminal bowel tumor without serosal invasion after a disease-free period⁹. This work was conducted in order to give the origin and descriptive study for colorectal cancer patients regarding age, family history, smoking and diabetes and serum CEA, stages of cancer, bowel habit, and symptoms.

PATIENTS AND METHODS:

The study was conducted in Alkathymia Teaching Hospital Baghdad during the period from 2003 to 2020. This is a case series study for 736 patients with colorectal cancer. The data collected included: age, history of ovarian cancer and family history. Other factors for the patients were also studied including diabetes and smoking. Serum CEA was measured as a predictor factor for the diagnosis and severity of the disease. Stages of the disease, bowel habit and symptoms were also evaluated. The estimation of serum CEA based on fluorescence immunoassay technology using sandwich immune assay. Data are presented as percentages, and were analyzed by using the test Chi square. Statistical investigation was achieved by using the package version SPSS 16.

RESULTS:

Table 1 shows that patient ages were between 20- 50 years were the higher proportion of patients and were significantly ($p \leq 0.01$) higher than the other patients with ≥ 50 years or ≤ 25 years. Female with CRC of ovarian origin (59.5 %) were significantly ($p \leq 0.01$) higher than female patients with non ovarian origin (40.5%). Patients with family history were 31.2% of the total patients. Diabetic patients presented at 37.2%. Most of the patients had serum CEA ≥ 5 ng/mL (82.7%) and they were highly significant ($p \leq 0.001$) for serum CEA than the patients with less than 5. Stage 2 (42.3%) was significantly higher than stage 1 (15.6%), 3 (21.3%) and 4 (14.5%). For bowel habit, constipation presented 75.7% was significantly higher than diarrhea (24.3%). In addition, symptoms of bleeding per rectum (71.1%) was significantly higher than symptoms of pain was 28.9%.

Table 1: Descriptive study of colorectal cancer in Iraq of ovarian origin or not (No.=736)

Parameters	Frequency (%)	<i>p</i> values
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Age (years) ≤ 20 > 20-50 ≤ > 50	128 (17.4%) ^a 339 (46%) ^b 269 (36.6) ^c	Different letters mean significant at <i>p</i> value ≤ 0.01
Women with CRC of ovarian Origin Women with CRC of non-ovarian Origin	438 (59.5%) 298 (40.5%)	≤ 0.001
Family history Yes No	230 (31.2%) 506 (68.8%)	≤ 0.001
Diabetes Yes No	184 (25) 552 (75)	≤ 0.001
CEA (ng/mL)		
< 5 ≥ 5	127 (17.3%) 609 (82.7%)	≤ 0.001
Stages 1 2 3 4	115 (15.6%) ^a 311 (42.3%) ^b 157 (21.3%) ^{a,c} 153 (20.8%) ^{a,d}	Different letters mean significant at <i>p</i> value ≤ 0.01
Bowl habit		
Constipation	557 (75.7%) [□]	≤ 0.001
Diarrhea	179 (24.3%)	
Symptoms Bleeding per rectum Pain	523 (71.1%) [□] 213 (28.9%)	≤ 0.001

DISCUSSION:

In the present study, colorectal cancer patients with ages range between 25-50 years were significantly higher than patients with more than 50-year-old or less than 25-year-old. These results are inconsistent with published litrtures.^{10,11} However, colorectal cancer patients under 50 years were about the same as patients with above 50 years old, supporting that colorectal cancer was increasing in adult under the age 50 years.¹² The reason of high percentage of the patients for the range 25-50 years old

in this study could be attributed to shorter life span where elderly represent small proportion of Iraqi population pyramid.

In this work, male patients were significantly higher than female patients. These results are in agreement with previously published series from in USA,¹³ and Japan.¹⁴ Estrogen plays an important role for the protection of colorectal cancer through ER β that has anti-proliferation and apoptosis.¹⁵ Accordingly, female had better survival than male which made the gender a significant factor for colorectal cancer survival.¹⁶

About 40% the patients had family history which is considered high enough to be taken into this study. Many studies were also relevant with this result.¹⁷ Obuch *et al*¹⁸ found that mutation of DNA was the cause of colorectal cancer. The family history factor had a role of approximately 15% - 20% of incidence of colorectal cancer in patients.¹ The incidence of colorectal cancer in persons that have more than one parent is also two times greater than people of one relative.^{19,20}

Smokers presented 37.9% of the studied patients, this percentage should be taken into consideration. Since the association of smoking and colorectal cancer was documented,²¹ and the existence between smoking and the prognosis of non-metastasis colorectal cancer was observed.²² The duration and amount of smoking was associated with elevated risk of colorectal cancer.²³ Tumor smoking has been shown to promote tumor development via angiogenesis or cell mediated immune suppression.²⁴

In this study, diabetics presented 28.7% of the colorectal cancer patients. Since this study was a descriptive study the results cannot give any connection between diabetes and colorectal cancer, though the percentage of diabetes in this study should be taken for further study.

Controversial studies were found of the connection of diabetes and colorectal cancer. No statistical association between Diabetes and adenomatous polyps.²⁵ Moreover, in patients with and without diabetes, the likelihood of colon cancer recurrence tends to be close.²⁶ However, poor glycemic control in type 2 diabetic patients was associated with aggressive colorectal cancer.²⁷

In the present study, CEA presented 83.6% for patients of equal or more than 5 ng/mL. The cutoff value was considered 5 ng/mL.²⁸ Colorectal carcinoma serum also has elevated amounts of CEA relative to healthy people.²⁹ Serum CEA can be used as tumor marker for the diagnosis of colorectal cancer.¹⁴ However, serum CEA was with slightly elevated value with no specific pathology leading to unnecessary examination and stress to the individual.³⁰ Accordingly, serum CEA is not an independent marker for colorectal cancer.

The most significant aspect in diagnosis is the five-year survival of confirmed colorectal cancer patients, 90% for concentrated patients, 69% of patients with geographic expansion, and fewer than 12% for patients with metastatic disease.³¹ In the present study, regional spread (stage 2) was the highest rate compared with other stages. The explanation of these results could be the symptoms appeared at the second stage.

Constipation was the most common change in bowel habit, while pain and bleeding per rectum were the most common symptoms. The current results are consistent with other workers who concluded delay diagnosis and hospitalization of half of the colorectal patients.³² Kim *et al.*³³ reported a case of colonic metastasis presenting as an intraluminal fungating mass 8 years after surgery for ovarian cancer, this was in agreement with current study, also, this study was in agreement with results of ³⁴who reported a case of a patient who underwent surgery and adjuvant chemotherapy for bilateral ovarian cancer but had colon metastasis after a disease-free period of 20 years.

In conclusion, colorectal cancer has increased in Iraq especially with ovarian cancer origin. Patients with middle ages presented the highest percentage. Education should be applied for colorectal patients about bowel habit and symptoms including constipation and bleeding per rectum.

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