

Epidemiological distribution of colorectal cancer in AL-Diwaniyah province, Iraq: an observational study

Ali Abbas Radhi¹, Osamah Tahir Muslim^{2*}, Mohammed Abdlmohsin Abdlmaged¹

¹Gastroenterology Center, AL-Diwaniyah Teaching Hospital, Al-Qadisiyah

²Department of Internal Medicine, College of Medicine, University of Al-Qadisiyah

Abstract

Background: Colorectal carcinoma is the commonest type of alimentary tract cancer. The etiology is variable including genetic and environmental factors (mainly dietary) as well as inflammatory bowel disease. Surgery is now the only definitive therapeutic modality. Screening colonoscopy is the diagnostic tool by which most cases are diagnosed in developed countries.

Objectives: this study was aimed to study the distribution of colorectal cancer in AL-Diwaniyah province, Iraq, the age and sex predominance and the most common site and histopathological types of the tumor.

patients and Methods: the study involved 1080 colonoscopies done in the period between January 2016 to December 2017 in gastroenterology and hepatology center in AL-Diwaniyah city, Iraq, 60 patients were founded to have a colonic or rectal mass. Tissue forceps biopsy was taken and referred to an expert pathologist for histopathological study.

Results: The distribution of colorectal cancer is (5.5%), equal sex distribution. About (23) patients (38.4%) older than 60 years and (25) patients (41.6%) were between 40 – 60 year. while (12) patients (20%) less than 40 years. Rectum was the most common site. (29) patients (48.3%) then sigmoid colon (22) patients (36.7%) followed by transverse colon (5) patients (8.3%) and lastly the Rt. colon about (4) patients (6.7%). Regarding histopathology 95% was adenocarcinoma (46.7%) moderately differentiated while (28.3%) well differentiated and (20%). Poorly differentiated adenocarcinoma. Other histopathological types (signet ring and mucinous) was about (5%).

Conclusion: colorectal cancer is an increasingly recognized problem in our province region and a great attention should be paid to start the screening programs in our province and the whole country to detect tumors at early stage and decrease mortality.

Keywords: Colorectal carcinoma; alimentary tract; adenocarcinoma.

INTRODUCTION

Carcinoma of the Colon and Rectum is the most common type of alimentary tract malignancy. The disease has variable etiology involving genetic, environmental factors as well as inflammatory bowel disease (ulcerative Colitis & Crohn's disease). Surgery is the only curative modality. Colon cancer is now often diagnosed during screening colonoscopy in developed countries. The wide application of screening programs in many countries has led to early detection and regression in the prevalence of the disease over the last years in these countries and CRC is now considered to be a preventable disease [1]. Epidemiologically, colonic cancer is the second most common malignancy in women after breast cancer and the third most common in men after bronchogenic & Prostatic carcinoma. Australia/New Zealand scored the highest rate worldwide, while the lowest rate was recorded in Western Africa [2]. The etiology is a multifactorial; genetic, environmental factors (including diet), and inflammatory bowel disease are playing a role in the generation of this disease. Gene mutations are complex and often lead to evolution from the premalignant adenomatous polyp to a frankly malignant carcinoma over years [2]. In spite that many aspects regarding the genetic mutations are still unrevealed, evidences from recent studies indicate that they have the major role in the etiology of colorectal cancer. In familial adenomatous polyposis (FAP), gene mutation in APC gene cause the disease and by the age of forty years the affected individuals have an almost 100% chance of having colonic cancer [3]. In Lynch syndrome (Hereditary nonpolyposoidal colorectal carcinoma) ,a defect in mismatch repair (dMMR) caused by mutation in one of mismatch repair genes results in 40% lifetime risk of colonic carcinoma; affected persons also at increase risk for having extracolonic tumors such as urogenital , endometrial and other cancers [4]. Increased risk of colorectal cancer has been shown to be associated with intake of food staffs containing high amount of red meat and animal fat and low amount of fiber, fruits and vegetables. On the other hand, one study found that consumption of high fiber diet especially cereals and whole grains was associated with a lower risk of colonic malignancy. Increased yogurt intake has led to reduced risk of colorectal cancer in another study. Aspirin intake is found to reduce the risk in some groups [5]. Other factors such as folate and calcium intake, and estrogen replacement therapy are found to be associated with

lower risk of colorectal carcinoma in some retrospective studies ,but this result has not been validated in prospective, placebo-controlled trials [6].

Sedentary lifestyle, obesity, cigarette smoking and alcohol intake have been associated with higher risk for colonic cancer. Ulcerative colitis and Crohn 's disease are considered to be premalignant conditions putting the affected person at greater risk of colonic adenocarcinoma. Those with the greater extent colonic involvement and longer duration of the disease are at the greater risk for developing colorectal malignancy [10].

Surgical resection is the only curative treatment for localized colon cancer (stage I-III) and is potentially curative for patients with limited metastatic disease (hepatic and/or pulmonary metastasis) (stage IV disease). Patients who are not fit for surgery can get benefit from other treatment choices such as: Cryotherapy, Radiofrequency ablation and Arterial Hepatic Chemoembolization. In the last decade a dramatic improvement in the outcome for patients with advanced disease by the advent of newer agents such as: Novel Cytotoxic drugs, Oral fluoropyrimidines, Biologic agents and most recently, anti-angiogenic agents [11-16]. The advances in laparoscopic surgery had great impact on the treatment of colonic tumors, and there was no statically significant difference between conventional and laparoscopic surgery in regard to surgical and oncologic outcomes in a large prospective study. The overall 5-year survival for colorectal cancer (all stages included) is approximately 65%. And is inversely related to stage of disease at diagnosis being 95% for patients with stage I disease and 10% for those with stage IV(metastatic) disease. Factors associated with poor prognosis are: tumor larger than 5 cm, disease-free interval of less than a year, multiple tumor, primary lymph-node involvement, high Carcinoembryonic antigen (CEA) level greater than 200 ng/mL [17-21].

PATIENTS AND METHODS

Informed consent was obtained from all patients and the project was approved by the Faculty of Medicine, University of Al-Qadisiyah Ethics Committee About 1080 patients who underwent colonoscopy in AL-Diwaniya gastroenterology center were included in this study during the period between January 2016 up to December 2017. A 60 patients with finding of colorectal tumor

were reviewed for age and sex, location of the lesion and tissue biopsy sent for histopathological study by expert pathologist for documentation of malignant tumor. The colonoscopy exams done by (Olympus CF-Q260DL) or (Pentax EC-3885TFK) scopes by one or two expert endoscopists.

RESULTS

The distribution of colorectal cancer is (5.5%) of colonoscopies done. Equal sex distribution, about (23 patients) (38.4%) were older than 60 year and (25patients) (41.6%) were between 40 – 60 y. while (12patients) (20%) younger than 40 year; Rectum is the most common site (29 patients) (48.3%) then sigmoid colon (22 patients) (36.7%) followed by transverse colon (5 patients) (8.3%) and lastly the rt.colon about (4patients)(6.7%). Regarding histopathology (95%) of cases were adenocarcinoma; (46.7%) moderately differentiated, (28.3%) well differentiated and (20%) were Poorly differentiated adenocarcinoma. Other histopathological types (signet ring, mucinous) constitute about (5%).

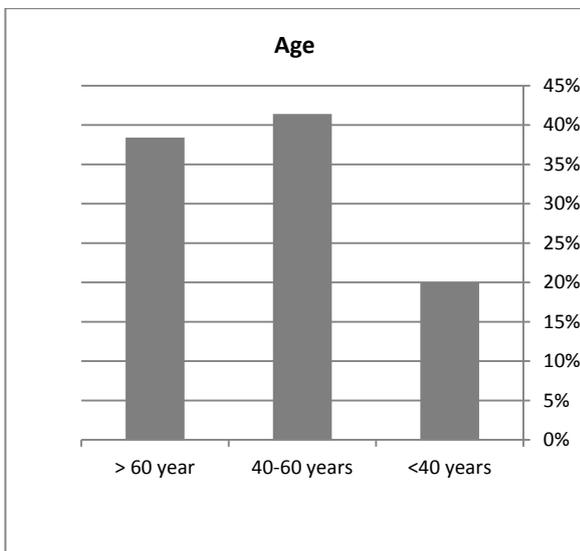


Figure 1: the distribution of age predominance

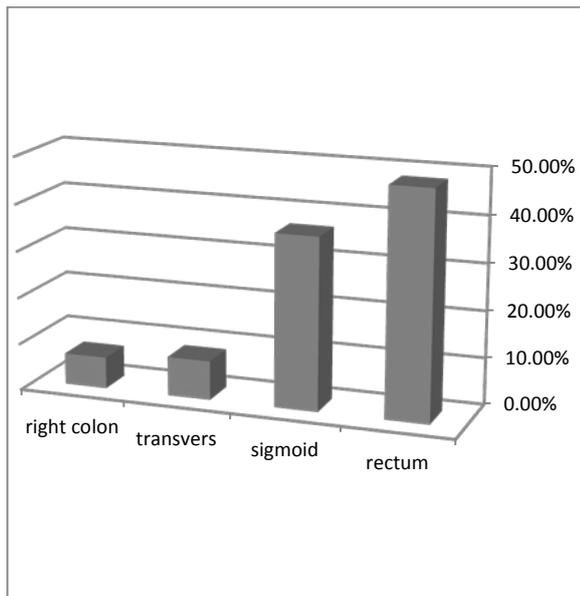
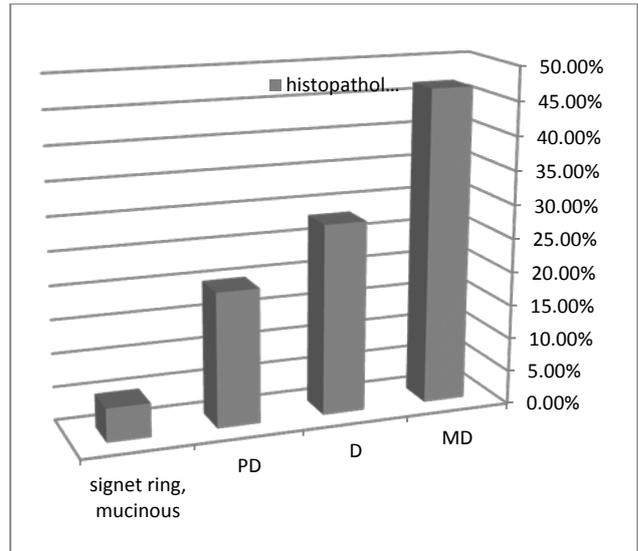


Figure 2: tumor site distribution



MD: moderately differentiated

D: differentiated

PD: poorly differentiated

Figure 3: histopathological distribution

DISCUSSION

Colorectal cancer is common type of gastrointestinal tumors and it is the third most common tumor death worldwide [17]. Although we don't have a reliable data till now in Iraq for the exact prevalence of the disease but we are facing an increasing number of cases during the last few years; most of them presented with advanced disease [18]. In this study we tried to estimate the detection rate of the colonic cancer in AL-Diwaniyah province. It is very important to mention that this number of cases (60 per two years) in respect to the total populations of AL-Diwaniyah province (1,200,000) is under estimate the real figure because of many patients prefer to do colonoscopy in the neighboring provinces and even outside the country, beside that many cases of colon cancer diagnosed by imaging studies such as CT scan or US and undergo surgery without doing colonoscopy. On the other hand, we received many cases for colonoscopy referred to the center from other provinces so that figures may not reflect the distribution of the disease in Al-Diwaniyah province alone. There was no sex predilection for the tumor in this study but the age distribution is variable, the highest percentage of (41.6%) was in (40 – 60) years age group, (38.4%) for the patients older than (60 years) age, a significant percentage (20%) were less than (40 year) age. Accordingly, the age of screening colonoscopy should be at 40 years to detect the colorectal polyps which is the precursor for development of colorectal cancer [19-21].

The study shows that the large number of tumors discovered at rectum (29 out of 60) and this is the advantage of doing sigmoidoscopy as a screening procedure for many patients with comorbidities like cardiorespiratory problems or for those patients hard to be prepared well for the total colonoscopy. (95%) of histopathology testing of the patients was adenocarcinoma which is the most common type colonic tumor worldwide [21].

CONCLUSION

Colorectal cancer is an increasingly recognized problem in our province region and a great attention should be paid to start the screening programs in our province and the whole country to detect tumors at early stage and decrease mortality.

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