Prevalence and Property of Colonic polyp and Adenoma among Iraqi Patients

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Abstract

Background: Colorectal cancer (CRC) is the third common diagnosed. cancer in the world, so that colonic polyp detection is important because colonic polyp is a precursor to CRC.

Objective: To detect the prevalence of polyp and adenoma.

Patients and Methods: A retrospective study was done using reports of endoscopic examination done previously for patients seen at gasteroenterology and hepatology hospital in Baghdad.

Results: The study included 924 examination of colon, mean age of patients was 48.1 years. Polyps was detected in 128 colonoscopies. (PDR) was 16.7 %. The PDR was higher in patients ≥ 60 years old (25 %), while polyp detection rate was (17.7 %) in those 50 – 59 years age group. Adenoma was found in 7.9 % of those with completed colonoscopies. It was higher in male patients (9.2 %) than female patients (6.2%). It was highest in age group ≥ 60 years old (15.9%), while adenoma was found in (8.2 %) of those with age group of 50 – 59 years old.

Conclusion: This study highlight on the prevalence of polyp (16.7%) and adenomas (7.9%) in patients underwent endoscopy for different indications, and give us an idea about screening for CRC in Iraq and at which age it should be started.

Keywords: CRC, PRD, ADR

Introduction

Colorectal cancer is the third common diagnosed cancer world wide [1]. It is assessed that the CRC rates will increase to double over the next two decades due to ongoing rise of the disease's incidence in the developing countries [2]. In Western countries. with high incidence of CRC , performance of screening endoscopy with polypectomy in average-risk persons, have led to reductions in the incidence of CRC [3]".

The polyps had clinical significance (especially the adenomatous polyp) due to risk of transformation to colorectal cancer (CRC)[4].

Colonic polyp:- is a mass of tissue protrudes into bowel lumen. polyps can cause symptoms as bleeding.. abdominal pain and large polyps may cause intestinal obstruction [5]".

Polyps can be classified into two main groups: neoplastic and non-neoplastic,

.neoplastic divided in to adenoma and carcinoma [5].

Neoplastic Polyps: including adenoma and carcinoma, tubular adenomas account for 80% to 86% of all types of adenomatous polyp (AP), whereas tubulovillous account for 8% to 16%, while villous adenomas represent 3% to 16% [6,7]. The dysplasia exhibited by all adenomas can be classified into 3 groups : mild, moderate, and severe". mild dysplasia is found in 70% to 86% of AP, moderate dysplasia in 18% to 20%, where as severe dysplasia in 5% to 10% of AP, and invasive carcinoma in 5% to 7%.[7,8,9]".

Table (1): Classification of colorectal polyp

Neoplastic Polyps
"Benign (Adenoma)
Tubular adenoma
Tubulovillous adenoma
Villous adenoma"
"Malignant (Carcinoma)
Noninvasive carcinoma:
Carcinoma in situ
Intramucosal carcinoma
Invasive carcinoma (through muscularis mucosae)"
Serrated Polyps
Sessile serrated polyp/adenoma
Traditional serrated adenoma"
"Non-neoplastic Mucosal Polyps
Hyperplastic polyp
Juvenile polyp
Hamartomus polyp
Inflammatory polyp
Mucosal polyp (normal mucosa in a polypoid configuration)"

Malignant risk of AP: "There are three features that associated with malignant risk of AP involved size of polyp,. histologic type,. and degree of dysplasia. The risk malignant transformation is related directly to larger size, villous histology, and higher degree of dysplasia [5]".

The prevalence of AP can be affected by 4 factors, which associated with inherent risk, age of person, gender, and family history of CRC[10].

Serrated polyps are classified histologically into 3 distinct types sauc as hyperplastic (HPs); sessile serrated polyp/adenomas

(SSP/As); and traditional serrated adenomas (TSAs). HPs are generally believed to have no malignant potential [5]".

SSP/As and TSAs: Epidemiology and Detection: SSP/As are less prevalent than HPs, which represent less than 1% of all polyps. and between 1% and 11% of adenomas [11].

Hyperplastic Polyps(HP) are small sessile lesions. Sometimes difficult to distinguish it from small adenomatous polyps. sporadic HPs have little intrinsic malignant potential [12].

Juvenile Polyps (JPs) have no malignant transformation risk when single, and no risk of recurrence. When JPs are multiple the risk of cancer transformation is present [13]. Peutz-Jeghers Polyps are always multiple, their peculiar appearance, with the presence of extraintestinal manifestations, makes the diagnosis of Peutz-Jeghers syndrome easy [5].

Inflammatory Polyps (Pseudopolyps) is a term used to identified them from neoplastic polyps. Any type of severe colitis, including IBD (UC, Crohn's disease)[14] may lead to development of inflammatory polyps.

The detection of polyps are usually asymptomatic. They can be found during screening for colonic cancer or identified during endoscopic examination done for patients complaining form symptoms related to colon or as investigation of unexplained iron deficiency anemia [5].

The determination that whether the institution of a screening program for population is effective or not and whether it is practical or not, this depend on the prevalence of adenoma, and other factors that related to the healthcare resources [15].

The aim of this study to detect the prevalence of polyp and adenoma .

Patients and Methods

A retrospective analysis was done by using a colonoscopic reports of patients seen at gastroenterology and hepatology hospital in Baghdad , medical city, between 1st of February 2015 and 1st January 2016. The data obtained included the age, gender, symptoms, indication for endoscopy. Patients who didn't complete colonoscopy due to any reason were excluded from the study.

Patients suffering from following disease was also excluded: Colon cancer, inflammatory bowel disease (IBD), colonic resection, any patient who had colonoscopic examination outside our center and referred for polypectomy was also excluded.

Property of colonic polyps:- including the size, number and location are notarized in the reports by endoscopists. assessment of size was done by the examiner using biopsy forceps, as the diameter of open forceps is about 5 mm". Detected polyp was excised during colonoscopy, using snare and electrocoagulation for large polyp after obtaining agreement of patient and forceps for small polyp.

Statistical Analysis

Analysis of data was carried out using the available statistical package of SPSS-20 (Statistical Packages for Social Sciences-version 20).

Polyp detection rate (PDR), can be calculated as following (the number of endoscopy where one or more polyps identified during procedure / total number of colonoscopy performed by the gastroenterologist). Adenoma detection rate

(ADR) calculated by (number of endoscopies where one or more adenoma identified / total number of colonoscopies done by endoscopist.

Results

This study included 924 colonoscopic reports. The median age of patients was 48.1 years (SD 15.9) rang was 19 - 89 years. Female represent 43.39 % (401 patients), while males formed 56.61% (523 patients) of the study population.

The results of this showed that the reasons for colonoscopy included the rectal bleeding (33.11%), pain (19.8%), diarrhea (17.53%), change in bowel habits (8.87%), constipation (7.9%), screening (2.81%), weight loss (1.19%), anemia (2.7%), melena (1.08%), and bloating (0.4%).

Cecal intubation rate was 82.6%, and terminal ileum intubation rate was 46.6%. Patients who had complete colonoscopy were 764 in number, while 160 (17.3%) were excluded due to incomplete colonoscopy . The cause of incomplete endoscopy were: inadequate preparation for colonoscopy in 62.5%, pain in 25%, not mentioned in 12.5% . Polyps was detected in 128 colonoscopies. After exclusion of noncompleted colonoscopies (160 colonoscopy) the (PDR) was 16.7 %. After exclusion of those with complete colonoscopy but had inadequate preparation (258 colonoscopy) PDR was 19.9%. The mean age of patients who had polyps (128 patients) was (50.5±14.5 SD) and range from 20 to 80 years, age groups of the patients were shown in Figure (1). The male proportion of the study sample who had polyp detected considered a higher proportion 63.3% (81 patients) whereas female was 36.7% (47 patients).

The polyp detection rate was higher in patients ≥ 60 years old (25 %), while PDR was (17.7 %) in those 50 – 59 years age group, (13.9 %) for those 40 – 49 years old and (12.1 %) for those 30 – 39 and 20 – 29 years old Table (2).

Most of polyps are detected in the left side (descending colon) (41.1%), then rectum (25.0%), the right (ascending colon) (13.3%), and transverse colon (10.9%), while (9.4%) of polyps found in multiple locations. Regarding size, 73.4 % of polyps was smaller than 1 cm in size, the reminder was ≥ 1 cm. single polyp was detected in 79.7 %, whereas multiple polyps was found in 20.3% Table (3).

Regarding the histopathology, "tubular adenoma" was found in (38.3 %), hyperplastic polyp in (31.3 %), hamartomus polyp in (11.7 %), tubulovillous in (4.7 %), villous in (4.7 %), mucosal polyp found in (8.6 %), lipoma in (0.8 %) Table (4).

Adenoma was found in 61 colonoscopies (7.9 %) of those with completed colonoscopies (764). It was higher in male patients (9.2 %) than female patients (6.2%). It was higher in age group ≥ 60 years old (15.9%), while adenoma was found in (8.2 %) of those with age group of 50 – 59 years old Table (2).

"High grade dysplasia" was found in (24.6%) of patients with adenoma, while low grade dysplasia found in (75.4%) of patients, "high grade dysplasia" was higher in age group ≥ 60 years old than age group 50 – 59 years old (60% , 13.3% respectively), low grade dysplasia found in (6.5%) of those with adenoma and age group 20 – 29 years and in (4.3%) for age group 30 – 39 years, (21.7 %) for 40 – 49 years, (26.0 %) for 50 –

59 years and (41.3 %) for those ≥ 60 years old Table (5).

Regarding location, adenoma most frequently distributed in descending colon (50.8%) followed by right side (cecum and ascending colon)(29.5%), transverse colon (11.4%) and rectum (8.1%) Table (6).
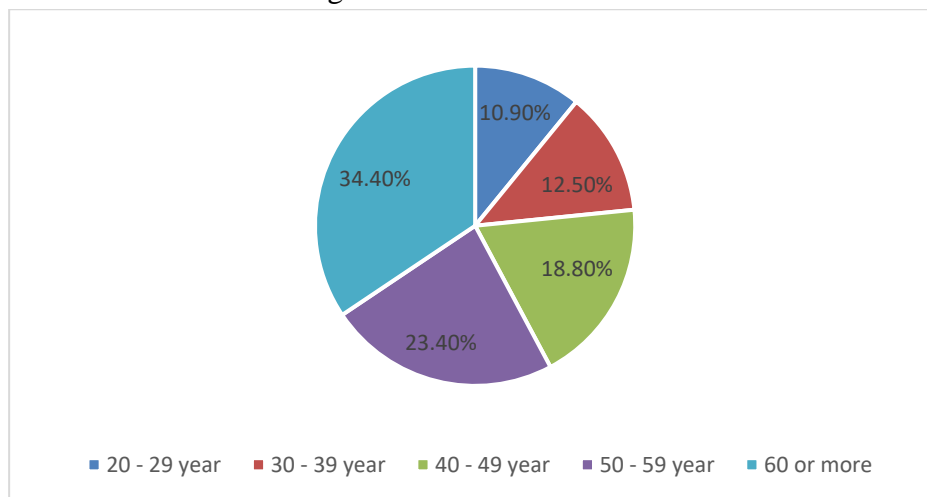
Figure (1): Distribution of age group of patients with polyp

Table (2): Polyp and adenoma detection rate according to age groups

Age group	Total number (764)	(no*.) Polyp detection rate	(no.) Adenoma
20 – 29 years	115	(14)12.1%	(3)2.6%
30 – 39 years	132	(16)12.1%	(3)2.2%
40 – 49 years	172	(24)13.9%	(13)7.5%
50 -59 years	169	(30)17.7%	(14)8.2%
≥ 60 years	176	(44)25%	(28)15.9%
Total	764	128	61

* no.: number

Table (3): Distribution of polyp size, number of polyps and location of polyps

		number	Percent
Polyp size	Less than 1 cm	94	73.4
	1 cm or larger	34	26.6
Number of polyps	One polyp	102	79.7
	More than one polyp	26	20.3
Location of polyp	right side colon(ascending or cecum)	17	13.3
	Transverse or hepatic flexure	14	10.9
	Lt side colon(splenic flexure , descending and sigmoid)	53	41.4
	Rectum	32	25.0
	Multiple	12	9.4

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Table (4): Histology of polyp and prevalence of adenoma

		number	Percent
Histology of polyp	Hyperplastic polyp	40	31.3
	Tubular adenoma	49	38.3
	Hamartoma	15	11.7
	Tubulovillous	6	4.7
	Villous	6	4.7
	Mucosal	11	8.6
	Lipoma	1	0.8

Table (5): Types of dysplasia among age groups of patients

Age groups	High grade dysplasia	percent	Low grade dysplasia	percent
20 - 29 years	0	-	3	6.5
30 - 39 years	1	6.66	2	4.3
40 - 49 years	3	20	10	21.7
50 - 59 years	2	13.33	12	26.0
60 years or more	9	60	19	41.3
Total	15	24.6	46	75.4

Table (6): Locations of adenoma

location	number	Percent
rectum	5	8.1
Sigmoid and descending colon	31	50.8
Transverse colon	7	11.4
Cecum and ascending colon	18	29.5

Discussion

In our study polyp detection rate was 16.7%, this rate is less than rate reported in other countries, in a prospective multicenter study done in Italy. The PDR was 35% [16], in recent high volume endoscopy studies performed in Spain, PDR was 45.8% [17]. Identical study in Mayo Clinic , USA, revealed that PDR was 49% [18]. Barret, et al.[19], a study done in France , where the national database of colonoscopy reports were reviewed and the reported PDR was 35.5%. While in Saudi Arabia the polyp detection rate was 20.8% [15]. However, studies from Kuwait reports that PDR was 12.5 and ADR was 10% [20].Among the

Iranian, PDR of 14.8% was recorded [21]. This finding may be related to polyp prevalence in this area of the world as noted from comparable PDR in surrounding countries.

In our study we noticed that patients aged 50 years and older had high prevalence of polyps compared with persons younger than 50. this may give us idea about the ideal age of starting colonoscopy screening in Iraq.

Cecal intubation rate was 82.6%, which is slightly lower than that selected by the American. Society for Gastrointestinal endoscopy (ASGE) which is ≥90% , this may be related to poor preparation quality which account for 62.5% of patients with incomplete colonoscopy.

In present study we found that most of the polyp detected was located in left side of colon 41.1% followed by rectum, right side of colon, transverse colon where as 9.4% of polyps located in multiple locations, this finding slightly consistent with study conducted in our center between August 2003 and December 2004, where 96 patients were included, they found that most of the polyps was detected in distal colon 65.6%, where as 34.4% found in proximal colon and 25.4% of polyps had multiple locations [22].

In our study the prevalence of adenoma was 7.9%, while in Saudi Arabia 8.1% [15], in Kuwait 10% [20]. In Oman, was 12.1% [23], In Iran, it was 14.3%(24). In the Western countries ," the adenoma detection rate for screening colonoscopies is 25% for males and 15% for females [25].

Moreover, a retrospective review from Mayo Clinic, USA, establish that the ADR was 42% for some endoscopist [18].
So, it appears that adenoma prevalence are less in Asian populations in comparison to western populations [15]. In our study the adenoma was more prevalent in patients ≥ 40 years old.

In our study most of the adenoma detected was tubular adenoma, low grade dysplasia was detected in 75.4% while high grade dysplasia was found in 24.6%. High grade dysplasia was more in those $\geq$60 years old (60%), same finding in a study conducted Firuzgar Hospital in Iran [24] where they found that advanced adenoma was more frequent among the 60-69 age group.

In present study we observed that most of the adenoma was located in left side of colon (sigmoid and descending colon) 50.8%, followed by right side of colon (cecum and ascending colon) 29.5%, transverse colon 11.4%, and the least were found in the rectum 8.1%, this slightly different from distribution of adenoma in Saudi Arabia patients, where adenoma mostly located in descending colon followed by rectum, right side of colon and lastly transverse colon [15].

Conclusions

This study highlighted the prevalence of polyp (16.7%) and adenomas (7.9%) in patients underwent endoscopy for different indications, and give us an idea about screening for CRC in Iraq and at which age it should be started.

Recommendations

The importance of PDR and ADR for early detection of CRC discuss the need for CRC screening using standardized methods including colonoscopy.

Adapting method for improving polyp and adenoma detection such as improving quality of preparation, adequate withdrawal time and thorough examination of colonic mucosa.The need of multicenter studies including all governorate to detect PDR and adenoma detection rate in Iraq using standardized guidelines for colonoscopy.

Ethical clearance: Ethical approval was obtained from the College of Medicine / University of Diyala ethical committee for this study.

Conflict of interest: Nil

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انتشار وخصائص سلائل القولون والاورام الحميدة عند عينة من المرضى العراقيين

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الملخص

خلفية الدراسة: سرطان القولون والمستقيم هو ثالث أكثر أنواع السرطان تشخيصا في العالم. أهمية سلائل القولون ، وخصوصا الاورام الحميدة، تأتي من حقيقة أنها نذير لسرطان القولون والمستقيم.

اهداف الدراسة: لكشف عن انتشار سلائل القولون وكذلك الاورام الحميدة.

المرضى والطرائق: أجريت الدراسة بأثر رجعي باستخدام تقارير ناظور القولون لمرضى تم اجراء الفحص لهم في مستشفى الجهاز الهضمي و الكبد التعليمي في بغداد، العراق.

النتائج: شملت الدراسة 924 فحصا بالمنظار. وكان متوسط العمر 48.1 سنة (SD 15.9). مثلت الإناث 43.39% (401 مريضا)، في حين شكل الذكور 56.61% (523 مريضا). تم الكشف عن سلائل القولون في 128 فحصا بالمنظار للقولون. بعد استبعاد تنظير القولون غير المكتمل كانت نسبة اكتشاف السليلة 16.7%. وكان معدل اكتشاف السلائل أعلى لدى المرضى البالغين من العمر 60 سنة واكثر (25%)، في حين كانت النسبة (17.7%) في الفئة العمرية 50-59 سنة. تم العثور على الورم الحميد في 7.9% من تنظير القولون الكامل. وكانت أعلى في المرضى الذكور (9.2%) من المرضى الإناث (6.2%). وكانت أعلى في المجموعة العمرية ≤ 60 سنة (15.9%)، في حين تم العثور على الورم الحميد في (8.2%) من ذوي الفئة العمرية من 50-59 سنة.

الاستنتاجات: هذه الدراسة تسلط بعض الضوء على مدى انتشار سلائل القولون والاورام الحميدة في المرضى اللذين تم اجراء فحص ناظور القولون لهم، وتضاف إلى البيانات التي من شأنها تحديد ما إذا كان هناك حاجة وفعالية لبرنامج التحري عن سرطان القولون والمستقيم في العراق.

الكلمات المفتاحية: CRC, PRD, ADR

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