Original paper

Prevalence of Colon Polyps Detected in Patients Did Colonoscopy in Karbala Gastroenterology Centre

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Abstract

Background: There is an extensive yet inconsistent body of literature reporting on the prevalence of colonic polyps among risk individuals. The objectives of our study were to determine the prevalence of colonic polyps, its site, solitary or multiple, sex and age association among patient at risk in Al-Hussein medical teaching city, Karbala, Iraq.

Aim of the study: Colonic polyp is relatively common benign condition, mainly affect middle-aged adults. The objective of this study is to predict the prevalence and location of colon polyp, and to determine its variation based on age and gender.

Material and methods: This is a cross sectional screening study, done in Karbala, Iraq. Colonoscopy data were retrospectively collected from the endoscope unit records system from Al-Hussein Medical City in Karbala during the period from September, 2012 through May, 2016.

A total of 1380 patients (810 males and 570 females) were collected, patients' age range (4-67 years). The prevalence of any polyp was recorded for age and gender.

Results: Colon polyps were found in 227/1380 patients (16.44%); 125/810 (15.43%) in males and 102/570 (17.89%) in females. There was no significant difference between males and females, (adjusted OR 1.02; 95% CI 0.76–1.13).The highest prevalence rate of colonic polyp was 12.3% in the age group 41-45 yrs followed by 11.5% in age group 36-40 years, (p = 0.15; adjusted OR 0.99; 95% CI 0.79–1.06). Rectum is the most commonly affected site (44.9%) followed by sigmoid colon (25.1%). Multiple polyps in different sites are 13.6%. Multiple polyps in the same colon region are 12.3%.

Conclusion: The prevalence of colon polyp in population at risk during the study period was about 16.44% in Karbala, Iraq with no significant gender variation. In addition, the highest prevalence rate was in patients' age group 41-45 years and the most common affected site is rectum followed by sigmoid colon.

Keywords: colon, polyp, colonoscopy, Karbala

Introduction

Colonoscopy is the gold standard for imaging colonic mucosa and it is the most accurate test for detecting mass lesion of the large bowel or colon that are suspected on clinical or radiologic ground, and has greater sensitivity than barium enema for colitis, polyp, and cancer[1, 2].

The colonic polyps are discrete masses of tissues that project into the bowel lumen. These may be symptomatic or asymptomatic, pedunculated or sessile, and range in size from millimeters to many centimeters in diameter, and whether they are confined to the mucosa or superficial sub mucosa, they are nearly all amenable to endoscopic removal[3].

The polyp may be characterized by its gross appearance and its size, it is one or multiple, and it can occur elsewhere in the gastro intestinal tract. Polyps can cause symptoms due to their protuberance into the bowel lumen and the stresses of the fecal stream to

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which they are exposed. They can ulcerate and bleed; abdominal pain can result when a peristaltic wave propels a polyp downstream, thereby stretching its blood supply and nerve fibers and occasionally producing intussusceptions; and large polyps rarely may even obstruct the lumen. Symptoms from polyps are uncommon, however, and the greatest concern with polyp is their silent potential to become malignant[4].

Colon polyps are relatively common problems, though precancerous, most colonic cancers arise within previously benign adenomatous polyps, and if these polyps are removed, cancer can largely be prevented. The majorities of the polyps are benign; site, size and histopathology determine their clinical significance [2, 4, 5].

Only a small percentage of all colonic adenomas progress to carcinoma, however, and because colonic polyps are so common in the industrialized world, universal detection and removal pose practical and economic problems[4].

Being in the distal colon gives the colon polyps the most clinical importance due to highest rate for malignant transformation, so it was suggested to restrict colonoscopy screening only for those with distal polyp detected on flexible sigmoidoscopy[6-8].

Until recently, there is a paucity of works regarding colon polyp prevalence in Iraq. However, it was found that adenomatous polyp is the most frequent type of colorectal polyps identified in Iraqi patients [9].

In the separate studies, increment in the size and number of adenomas at catalog colonoscopy were the most commonly reported risk factors associated with recurrent advanced adenomas [10]

Colonic polyps are more common in men than in women and increase in frequency with increasing the age of patients [11-14]

The reported prevalence of colonic polyps varies widely due to differences in structure of the studies and sensitivities of the test used to define prevalence [12]. It was estimated that 30% of the western population have colonic polyps while a lower rate (10-15%) is noted in Asia and Africa[15].

The prevalence of Colon polyps in asymptomatic Chinese were detected in 16.3% (971/5973, 613 males and 358 females). and the location of polyps are distal in 58.6%, proximal 29.2%, and combined proximal and distal 12.2% [16].

In Tehran, Iran the overall colonic polyp was 42.0 %, and it is significantly higher in men than women with the mean age of 48.3 years who were either in screening program or symptomatic[13].

While in other study again in Tehran, Iran, a polyp lesion is detected in 199/1208 (16.5%), with the mean age of participants was 56.5 ± 9.59 and 51.6% were male who were asymptomatic average- risk adults over 40 years of age[17].

In Tabriz, Iran, adenomatous polyps were detected in 11.7% of patients with lower gastrointestinal tract symptoms, 12.3% of men and 10.9% of women, and the mean age of the patients with a polyp was significantly higher than the others (49.53 ± 14.16 vs 41.85 ± 16.26, $P = 0.001$), most of these polyps were left sided and only 22.5% of polyps were more than 10 mm[14]

In Kuwait, the overall prevalence of colonic polyp adenoma 10.18% (54/530), among males was 11% (41/365); and among females, 8% (13/165) with the mean age of 44.8,the overall M-F ratio was about 2:1 and variable indications for referral [18].

In Saudi Arabia, the colonic polyp was 20.8%, and adenomas were found in 8.1% (95% CI: 7.1-9.1), the mean age was 50.5, and females represented 57.7%. Adenomas were found in the left side of the colon in 33.9%, followed by the rectum in 14.6%, ascending colon and cecum in 14.2%, transverse colon in 8.7%, and in multiple locations in 28.7%. The adenoma prevalence had higher proportion in older individuals [19].

In Iraq, colorectal polyp was picked out in 135 (9.2%) patient, more in male than female, polyp was single in 60(62.5%) and multiple in 36(37.5%) of patients, 42.5% of polyps were found in rectum, 24.3% were found in the sigmoid and 2.5% were found in the cecum[9]

The aim of this study is to predict the prevalence, site, age distribution and gender effect on colon polyp detected via the endoscope among population at risk.

Methods

The current study is a cross sectional screening study. It was performed in Karbala, Iraq. Data collection was dependent upon Colonoscopy reports were retrospectively collected from the endoscope unit records system from Al-Hussein Medical City and Al-Kafeel Hospital in Karbala during the period from September, 2012 through May, 2016. Data were gathered after taking permission from the concerned authority in the two hospitals.

A total of 1380 patients' colonoscopy reports (810 males and 570 females) were collected, patients' age range (4-67 years). These were ordered for colonoscopy screening due to symptoms such as bleeding per rectum, abdominal pain, past or family history of colon polyp, inflammatory bowel disease, or carcinoma, and/or chronic diarrhea. The prevalence of any polyp was recorded. The polyp site and number were recorded for age and gender. Colonoscopy findings were analyzed statistically using SPSS package version 22, accordingly to estimate the frequency distribution, adjusted odd ratio and p value. Data with probability (p) value of less than 0.05 is regarded significant finding [20].

Results

Colon polyps were found in 227/1380 patients (16.44 %); 125/810 (15.43%) in males and 102/570 (17.89%) in females.

There is no significant difference in frequency distribution of colon polyps concerning age of the patients, but the highest prevalence rate of colonic polyp was 12.3% in the age group 41-45 yr followed by age group 36-40 years 11.5%, ($p = 0.15$; adjusted OR 0.99; 95% CI 0.79–1.06), as shown in table 1.

Additionally, data of the current study reveals no significant difference between prevalence of polyps between males and females, (p value 0.31, adjusted OR 1.02; 95% CI 0.76–1.13), as shown in table 2.

Regarding the polyp site, it was found that rectum is the most commonly affected site (42.84%) followed by sigmoid colon (21.44%). Multiple polyps in different sites were found in 13.65% of the cases, whereas multiple polyps in the same colon region were recorded in 12.33% of the participants, as shown in table (2).

Table1. frequency distribution of colon polyp in regard to different age groups.

Age/ years	Number and percent of patient with polyps	P value
5-10	15 (6.6%)	
11-15	13 (5.7%)	
16-20	10 (4.4%)	
21-25	12 (5.2%)	
26-30	17 (7.5%)	
31-35	12 (5.2%)	
36-40	26 (11.5%)	**0.15**
41-45	28 (12.3%)	
46-50	21(9.3%)	
51-55	13 (5.7%)	
56-60	22 (9.7%)	
61-65	20 (8.8%)	
66-70	9 (4%)	
71-75	9 (4%)	

Table2. colon polyps in regard to gender distribution, multiplicity and site of the polyp(s).

Number (%) and site of polyps / Gender	R	S	C	T	D	HF	SF	A	>P	>>P	Total	P value
Males	61(48.8%)	26(20.8%)	12(9.6%)	10(8%)	8(6.4%)	4(3.2%)	0	4(3.2%)	15(12%)	(12.8%)	125	
Females	41(40.2%)	31(30.4%)	8(7.8%)	8(7.8%)	8(7.8%)	1(0.1%)	4(4%)	1(0.1%)	13(12.7%)	15(14.7%)	102	0.31
Total	102(44.9%)	57(25.1%)	20(8.8%)	18(7.9%)	16(7%)	5(2.2%)	4(1.8%)	5(2.2%)	28(12.3%)	31(13.6%)	227	

Key: R: rectal polyp, S: sigmoid, C: cecum, T: transvers colon, D: discending colon, HF: hepatic flecture, SF: splenic flecture, A: ascending colon,>P: Multiple polyps in the same colon region, >>P: Multiple polyps in different sites

Discussion

The prevalence of colon polyp in population at risk was about 16.44 % according to results of the current study in Karbala, Iraq. A previous study has discussed the prevalence of colorectal polyp in the same geographical region (Baghdad, Iraq) found that 9.2 % (135 out of 1467) patients had colorectal polyps, and this lower result may be due to the exclusion of patients who have inflammatory bowel disease, familial polyposis coli, colorectal malignancy, and patients underwent surgical resection of bowel [9].

Our study prevalence is compatible with the Liu et al study in spite of it's done in asymptomatic Chinese participants, and with Sohrabi et al study in Tehran, Iran who were asymptomatic average- risk adults over 40 years of age[16, 17].

While Bafandeh et al, and Al-Enezi et al study in Tabriz, Iran and Kuwait respectively shows lower prevalence result, about 11%, because both of them are record only adenomatus polyp which is the most common type of polyp [14, 18].

In Delavari et al study in Tehran, Iran the overall colonic polyp was 42.0 %, and this high percent could be due to the study design that include screening program and not only symptomatic patients[13].

In Almadi et al study in Saudi Arabia, the colon polyp prevalence was higher than the current study; it was 20.8% in spite of patients were excluded if they had colon cancer, colonic resection, active colitis, inflammatory bowel disease, or if the patient was referred for polypectomy[19], this higher result cannot be explained but the facilities in regard to equipment, colonic preparation, and technique maneuver that include experience and withdrawal time, may play a role.

The current study revealed no significant gender variation in colon polyp, this result is compatible with Sohrabi et al, Bafandeh et al, and Almadi et al result in Tehran, Tabriz, Iran, and Saudi Arabia respectively [14, 17, 19], but a study in USA found that men have a greater risk of colorectal polyps [odds ratio (OR), 1.5] than women as in Liu et al Chinese study, Delavari et al in Tehran, Iran, and Al-Enezi et al in Kuwait studies, all was significantly higher in male [13, 16, 18, 21]

The risk of finding polyps and tumors at colonoscopy increases with age, with the highest risk noted in those >69 yr of age relative to patients <50 yr of age[21]. Another study in USA stated that male sex, smoking, and alcohol consumption were associated with increased risk of development of colon polyp [22], Liu et al Chinese study shows the prevalence of polyp was significantly higher in subjects older than 50 years as compared to those younger than 50 years [16], the polyp detection rate inAlmadi et al study in Saudi Arabia ranged from 16.3% in those aged 35 to <40 years to as high as 31.8% in those aged 60 to <65 years[19], and in Delavari et al in Tehran, Iran, the Polyps were more frequently observed in patients after the 6th decade of life[13]. The finding of the current study is that the highest prevalence rate was in patients' age group 41-45 years and there is no significant difference in frequency distribution of colon polyps concerning age of the patients, and this may

relate to the number of cases who did co-lonoscopy among each group of patient.

The site of colon polyp is associated with neoplastic transformation tendency [22]. Thus, distal adenomatous polyps, including diminutive distal adenomatous polyps, are correlated with a higher prevalence of synchronous proximal neoplasia. Two percent to 5% of patients may develop isolated proximal neoplasia discovered by screening colonoscopy [23]. The right and transverse colons were strongly correlated with dysplasia. Colon polyps of the left colon and rectum were associated with adenocarcinoma. Lesions >1.0 cm were positively related to dysplasia and neoplasm [7]. Polyp size and shape are closely related to the development of colorectal cancer. Colonic polyps with a size greater than 1 cm and classified as Yamada type III or IV have a higher tendency for malignant transformation, and an excision is mandatory when they are discovered[24]. Furthermore, it was found that detection and removal of these polyps can reduce CRC mortality [25-27].

Data of the current study revealed that rectum is the most commonly affected site by colon polyp (42.84%) followed by sigmoid colon (21.44%). A previous study in Iraq during 2003 through 2004 with nearly similar results revealed that the commonest sites for colon polyp detected by colonoscopy were rectum and sigmoid colon[9]. However, another author stated that colon polyps were more frequently distributed in the left colon and rectum[7], same finding were observed in Liu et al, Delavariet al, Sohrabi et al,Bafandeh et al, Al-Enezi et al, and Almadi et al study, although in Delavari et al study shows sigmoid colon is the commonest site of polyp fallowed by rectum[13, 14, 16-19].

Regarding colon polyp multiplicity, the current study shows that colon polyps were multiple in 25.98%, while 74.02% of patients had single polyp. When compare this finding with finding of a previous study which revealed polyps were single in 60(62.5%) and multiple in 36(37.5%) of patients[9], combined polyps (proximal and distal) were in 12.2%[16], multiple polyps were 10.0%(17), and multiple locations in 28.7%[19].

Conclusion

The prevalence of colon polyp in population at risk during the study period was about 16.44% in Karbala, Iraq, is compatible with the study in China, and in Tehran, Iran, with no significant gender variation as in Tehran, Tabriz, Iran, and Saudi Arabia studies. In addition, the highest prevalence rate was in patients' age group 41-45 years while other studies show higher prevalence among patients older than 50 years. The most common affected site is rectum followed by sigmoid colon as in most of the studies.

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