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Prevalence of colorectal polyps in patients undergoing colonoscopy in Sulaimaniyah gastroenterology center: a retrospective study

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Abstract

Background & objectives: Colorectal cancers are believed to develop primarily through an adenoma-carcinoma sequence, with adenomatous polyps beginning as the primary precursor lesions. Thus, this study aimed to assess the prevalence of colorectal polyps with their characteristics and relation to age/gender and to aid in establishing a screening program to detect polyps and colorectal cancer in the early stages.

Methods: In this retrospective study, the data of 2698 patients who underwent colonoscopy in Sulaimani Gastroenterology Center, Sulaimaniyah, Iraq, for various complaints and asymptomatic patients from January 2019 to February 2021 were studied regarding colorectal polyps. Patients sociodemographic data (age, gender, and residency), presented symptoms, surveillance rate for colon cancer and polyps, and disease follow-up were studied. Briefly, patients were given bowel preparation solutions the day before the colonoscopy, and the process was performed under conscious sedation.

Results: The mean±SD age of patients was 52.0±17.59 years, and most were females (55.1%)($p=0.000$) and from urban areas (62.12%) ($p\geq0.05$). Among the studied patients, 14.3% were diagnosed with polyps, of which 17.1% were males and 12.1% were females. The high prevalence rate was found in patients aged >60 years (23.8%), followed by 50-60 years (17.71%), and then 40-49 years (13.07%).

Conclusion: Colorectal polyp was common among patients undergoing colonoscopy for several gastrointestinal symptoms, especially after the age of forty.

Keywords: Colonoscopy, Colorectal cancer, Polyp, Retrospective study, Screening program

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Introduction

Colorectal cancer (CRC) is reported to be the third most frequently diagnosed cancer and the fourth most common cause of cancer-related death worldwide.[1, 2] Most CRC cases are found in developed nations. Still, a significant rise in disease prevalence in regions with lower human development indices was also seen over the recent decade. Many areas with a medium to high human development index in Asia, South America, and Eastern Europe have reported an increased incidence of CRC, according to recent studies.[1]A lesion with neoplastic tissue growing above the intestinal mucosa is called a colorectal polyp. Adenoma, the most common of colorectal polyps, is recognized as a precursor for CRC.[3, 4] Most CRCs are believed to develop primarily through an adenoma-carcinoma sequence, with adenomatous polyps beginning as the primary precursor lesions.[5, 6] The rate of colorectal adenomatous polyps varies significantly among countries and is strongly linked to each country's incidence rate of CRC. According to studies using sigmoidoscopy and colonoscopy, the average adenoma prevalence among healthy patients without symptoms is around 10% and more than 25%, respectively.[7]Patients with colorectal polyps had a greater chance of developing CRC than those without polyps, according to studies involving long-term follow-up of those with polyps. Notably, the likelihood of tubular, tubulovillous, and villous adenomas increased 1.41, 2.56, and 3.82 times, respectively. Therefore, the management of colorectal polyps is thought to be associated with the prevention of CRC.[3]It has been widely accepted that CRC screening can reduce mortality by identifying tumours at an early, treatable stage and identifying and eliminating adenomas.[8, 9] Early diagnosis and excision of polyps containing cancer cells could be preventive interventions because transforming from adenoma to carcinoma is lengthy. Some studies claimed that the rate of CRC had dropped after using numerous screening methods. According to these studies, after 12–18 years of adhering to the screening program, the mean mortality associated with CRC decreased by 10–22%.[10, 11]Precancerous polyps' detection and removal during colonoscopy is critical to significantly lower the incidence of CRC and the associated morbidity and mortality. For the detection and excision of colonic polyps, a colonoscopy is a safe and efficient procedure.[12]Thus, we aimed to assess the prevalence of colorectal polyps with their characteristics and their relation to age and gender and aid in establishing a screening program to detect polyps and CRC in the early stages in Sulaimaniyah province, Iraq.

Patients and methods

In this retrospective study, data (including age, gender, residency, presented symptoms, surveillance rate for colon cancer/colon polyps, and disease follow-up) of patients who underwent colonoscopy in Sulaimani Gastroenterology Center, Sulaimaniyah, Iraq, for various complaints and asymptomatic patients from January 2019 to February 2021 were collected from the hospital record and studied thoroughly using a well-designed, self-prepared questionnaire. Patients were given bowel preparation solutions the day before the colonoscopy, and then the process was performed under conscious sedation.All patients' data that underwent colonoscopy during the stipulated time were considered regardless of gender, age, ethnicity, or nationality. Data from patients with other cancers rather than CRC were excluded from the study. This study was approved by the scientific and ethics committees of the Kurdistan Higher Council for Medical Specialties (KHCMS) and authorities of Sulaimaniyah Gastroenterology Center, Sulaimaniyah, Iraq. All methods and procedures were done according to the Declaration of Helsinki. The need for written informed consent to participation was waived by the Kurdistan Higher Council of Medical Specialties KHCMS due to the retrospective nature of the study. All statistical analysis was performed using Statistical Package for Social Science

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(SPSS, IBM, Chicago, USA, version 24). The data were coded, tabulated, and presented in a descriptive form. Chi-square and student T-tests were used to determine the correlation between variables. P-value set as highly significant ($p \leq 0.001$), significant ($p \leq 0.05$), non-significant ($p \geq 0.05$), and very highly significant ($p \leq 0.000$).

Results

The mean±SD age of patients was 52.0±17.59 with a median age of 45.83 years and an age range of 3-108 years. Among the studied patients, 1211 were males (44.89%), and 1487 were females (55.11%) (p=0.000). Most patients were from urban areas (62.12%), and the rest were from the suburban region (37.88%) (p=0.103). Additionally, 387 (14.3%) cases were diagnosed with colorectal polyps, of which 277 underwent polypectomies. The incidence of colorectal polyps was higher in males (no.=207; 53.49%) than in females (no.=180, 46.51%), as shown in Table (1).

Table (1): Sociodemographic characteristics of studied patients with and without polyps.

Variable	Items	Polyps		Total	p-value
		No	Yes		
		Number, %			
Gender	Male	1004 (43.44)	207 (53.49)	1211 (44.89)	0.000**
	Female	1307 (56.56)	180 (46.51)	1487 (55.11)	
Residency	Urban	1450 (62.74)	226 (58.40)	1676 (62.12)	0.103
	Suburban	861 (37.26)	161 (41.60)	1022 (37.88)	
Total		2311 (100)	387 (100)	2698 (100)	

**Very highly significant difference

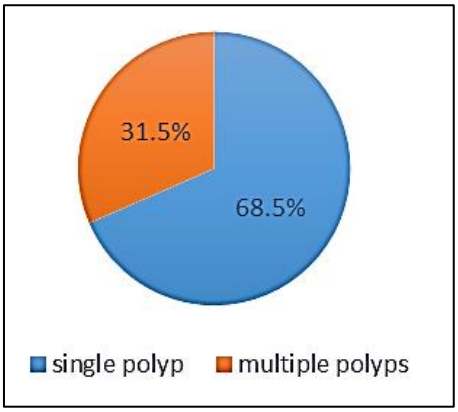

Figure (1): The types of the polyps.

Regarding the patients' clinical characteristics before colonoscopy, most of them had bleeding per rectum (29.46%), followed by abdominal pain (18.6%), then constipation (9.3%), anemia (3.1%), weight loss (2.58%), anal fissure/irritable bowel syndrome (IBS) (1.29%), and bloating (1.03%). On the other hand, 2.58% of patients were under colon cancer surveillance, and 6.72% were under colorectal polyp surveillance. Simultaneously, 0.26% of patients were follow-up for each ulcerative colitis and Crohn's disease. However, 34.6% of patients were asymptomatic participants, as shown in Table (2).

Table (2): Patients' clinical characteristics before colonoscopy.

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Clinical data	Number (%)
Abdominal pain	72 (18.6)
Constipation	36 (9.3)
Diarrhea	16 (4.13)
Anemia	12 (3.10)
Bleeding per rectum	114 (29.46)
Weight loss	10 (2.58)
Bloating	4 (1.03)
Surveillance for colorectal polyps	26 (6.72)
Anal fissure	5.0 (1.29)
Irritable bowel syndrome	5.0 (1.29)
Surveillance for colon cancer	10 (2.58)
Ulcerative colitis follow-up	1.0 (0.26)
Crohn's disease follow-up	1.0 (0.26)
Asymptomatic	134 (34.6)

The locations of polyps throughout the colon were also studied, in which the rectum (no.=107, 27.6%) was found to be the most prevalent site for polyps, followed by sigmoid (no.=83, 21.4%), descending colon (no.=49, 12.6%), transverse colon/anus (no.=29, 7.49%), then cecum (no.=21, 5.43%), as shown in Table (3). Moreover, 38 patients with a history of colon polyps were included in this study; 26 (68.4%) of them had polyps again, and 12 (31.6%) patients had no polyps.

Table (3): Distribution of colon polyps.

Site	No. of polyps	Percentage
Cecum	21	5.43
Ascending colon	33	8.53
Transverse colon	29	7.49
Descending colon	49	12.66
Sigmoid	83	21.45
Rectum	107	27.65
Anus	29	7.49

The ratio of polyps in different age groups was also investigated. The highest proportion was found in patients >60 (23.8%) (129/542), followed by 50-60 years (17.71%) (99/559), 40-49 years (13.07%) (77/589), and the least found in 0-9 years (10/40), as shown in Table (4).

Table (4): Age distribution of polyps.

Age Group (Year)	No. of patients	No. of Patients with polyps, %
0-9	40	10 (2.58)
10-19	99	11 (2.84)
20-29	307	21 (5.42)
30-39	562	40 (10.33)
40-49	589	77 (19.89)
50-60	559	99 (25.58)
>60	542	129 (33.33)
Total	2698	387

Furthermore, in this study, only 102 patients were followed-up for the histopathological examination of the polyps. Most of them had tubular adenoma (69.6%), followed by hyperplastic polyps (24.5 %); four patients had tubulovillous adenoma (3.92%), while only two patients had villous adenoma (1.96%), as shown in Table (5).

Table (5): Histopathological type of polyps.

Polyp type	No. of polyps	Percentage
Villous	2	1.96
Hyperplastic	25	24.5
Adenomatous	71	69.6
Tubulovillous	4	3.92
Total	102	100

Discussion

Literature reports on the prevalence of colorectal polyps vary greatly. This may be related to the study designs, the patient's socio-demographic characteristics regarding age/gender, and the selected study population.[5] Generally, >25% of the asymptomatic population undergoes colonoscopy, while screening colonoscopy with polypectomy has been shown to reduce CRC incidence and mortality.[13] A systematic review and meta-analysis study by Heitman et al. showed that adenoma was estimated at 30.2% in average-risk adults.[9] Previously, the data have shown a higher incidence of colon polyps and CRC in Western countries;[7] however, there has been a significant rise in colon polyps and CRC in Eastern countries, which might be attributed to lifestyle and diet

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changes.[5]According to the current study, the prevalence of colorectal polyps was 14.3%, with male predominance and a proportional increase in prevalence with increasing age, with a more than two-fold increase in prevalence in patients above 40 years, 69.2% of polyps were found in the left colon, while 21.4% were in the right colon, with the rectum being the most abundant site for polyps. Another study in Iraq showed similar prevalence rates of colorectal polys, 16% in Erbil[14] and 16.44% in Karbala.[15] However, with male predominance in the former study, while in the latter, females had a higher prevalence of 17.89% vs 15.43%. Moreover, Feyzullah et al. in a five-year evaluation reported 13.3% (470/3514) of colon polyps, with 61.7% being male patients.[12] A similar study in Iran by Sohrabi et al. shows a 16.5% prevalence of polypoid lesions in 199/1208 patients who underwent colonoscopy.[10]Regarding Asian countries, a cross-sectional study by Pan et al. mentioned that 3066 cases underwent colonoscopy, from which 554 (18.1%) patients had polyps.[5] Another prospective study in China by Liu et al. reported a prevalence of 971/5973 (16.3%) of colorectal polyps with a mean age of 56.6±10.7 which is close to the mean age of our studied patients with polyps (52.0±17.59 years).[16] Both studies noted that older subjects had higher rates of colorectal polyps. While in India, a lower rate of polyps was recorded in a large retrospective cohort study (10.18%).[17] In a single hospital-based retrospective study, 11.0% of polyps were observed in 14.7% of patients aged >40 years.[11]Polyp number was another aspect of this study, in which most patients (68.5%) had a single polyp, while 31.5% had more than one polyp anywhere in the colon. In the studies of Pan et al.[5], Al-Jameel et al.[15], and Lebwohl et al.[18], multiple polyps were seen in 32.7%, 25.9%, and 23% of patients, respectively. Regarding the polyp location in the current study, most polyps were identified in the rectum, followed by the sigmoid colon. Whereas a study by Liu et al. showed that most polyps are located in the distal colon (58.6%), followed by the proximal colon (29.2%), and combined (12.2%).[16]Consequently, the histopathological examination of polyps revealed the highest rate of tubular adenoma (69.6%), followed by hyperplastic polyps (24.5%), tubulovillous and villous adenomas were found in 3.92% and 1.96% of polyps, respectively. In a study in Duhok, Iraq, the ratio of hyperplastic polyps in the large intestine was 30.7% of all non-neoplastic polyps.[19] In comparison, tubular adenomas constituted 93.02% of neoplastic polyps in the large intestine, and tubulovillous and villous adenomas were 2.99% and 0.93%, respectively.[19] Furthermore, another study reported that the ratio of hyperplastic and adenomatous polyps was 31.7% and 53.6%, respectively.[12] They also subdivided adenomatous polyps into tubular 215/252 (85.3%), tubulovillous 32/252 (12.69%), and villous 5/252 (1.98%).[12] In Tehran, Iran, 86.9% of polyps were found to be adenomatous, among which 69.8% were tubular, 7.53% were tubulovillous, 2% were villous adenoma, and 13% were non-neoplastic adenoma [10]. In another study on tiny polyps in the sigmoid and rectum in a Colombian population, 51.0% were found to be tubular adenomas, 0.8% tubulovillous, and 43.3% were hyperplastic adenomas.[20] Moreover, Jayadevan et al. reported that 41.8% of patients had adenomatous polyps, and 49.5% had hyperplastic polyps.[11]These results showed that the prevalence of colorectal polyps in our locality is comparable with the countries in the region and other Asian countries but still lower than in Western countries, which may be related to the lifestyle of the populations, including diet, ageing population, obesity, or difference in screening programs among these countries and even design of the studies. Thus, further studies are needed to confirm the influence of these factors on the prevalence of colorectal polyps in this region.

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Conclusion

Colorectal polyp in Sulaimaniyah Province, Iraq, is a common finding among patients undergoing colonoscopy for several gastrointestinal symptoms, especially after age forty. Therefore, screening programs can be established based on these findings with a cut-off age to reduce morbidity and mortality from colorectal cancer.

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Conflict of interest

There is no conflict of interest.

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