

# Epidemiology of Colorectal Polyps in Iraqi Patients

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## Abstract

**Background:** A colorectal polyp (CRP) is a growth on the lining of the colon or rectum. The incidence of CRPs is rapidly increasing with age. They are most often benign. The rectum is the most commonly affected site. **Objectives:** To determine the incidence, clinical presentation, and histopathologic types of CRP in Iraqi patients. **Materials and Methods:** It is a cross-sectional screening study conducted in the medical city of Baghdad, Iraq. The total number of colonoscopies done in the medical city/GIT center was 2658 from May 2020–September 2022, where 100 patients with the diagnosis of CRP has collected. The males comprised 60/100 and their ages ranged from 4 to 75 years. **Results:** The most common age group affected was 46–59 years. There was a significant relationship between site and types of CRP, where the rectum showed 48% involvement, followed by the sigmoid colon at 34%. The villous adenomatous polyps look of large size ranging from 1.5 to 4 cm. The tubulovillous adenoma is the most common type, 25%. Lower gastrointestinal bleeding is the most common presentation, 25%. **Conclusion:** The most common age group affected was 46–59 years, with male-to-female ratio is 1.17. The most common site affected by CRPs was the rectum 48%, villous adenoma has the most significant size among all types (1.5–4 cm). No dysplasia was the most common finding (45%), and lower GIT bleeding and positive family history were the most common clinical presentation.

**Keywords:** Clinical presentation, colorectal polyps, Iraq

## INTRODUCTION

A colorectal polyp (CRP) is a growth on the lining of the colon or rectum. The incidence of CRPs is rapidly increasing worldwide. Polyps of the colon and rectum are most often benign.<sup>[1-3]</sup> It is thought they are caused by the body producing too many cells in the lining of the bowel.<sup>[3-8]</sup> In Iraq, there was no significant difference between males and females. The highest prevalence rate of the colonic polyp was 12.3% in the age group 41–45 years, followed by 11.5% in the age group 36–40 years, while in India, they found that the mean age of presentation in children was  $7.31 \pm 4.05$  years with a range of 2–19 years, with a male/female ratio of 2.16:1.<sup>[6-13]</sup> Left colonic polyps were more common in nonpolyposis patients. In Iraq, the rectum is the most commonly affected site (44.9%), followed by the sigmoid colon 25.1%; other studies. Adenomas in the left side of the colon constitute 33.9%, followed by the rectum at 14.6%.<sup>[4,8-18]</sup> Church and Erkan<sup>[12]</sup> found that the mean polyp size was 32.1–34.1 mm; however, Rex<sup>[13]</sup> found in his study that CRP lesions measured <20 mm in size

constitute 95% of all colorectal neoplasms and Bhandari found that 62.6% were 10–19 mm and 37.4% were  $\geq 20$  mm, and others found 61.3% were small size (<1 cm), 32.5% were medium size (1–2 cm), and 6.3% were of considerable size (>2 cm).<sup>[4,8,11,19-22]</sup> Previous studies showed that polyps were single in 62.5% and multiple in 37.5% of patients and were labeled as sessile in 59% or pedunculated in 40.6%.<sup>[4,8,23]</sup> Regarding the degree of dysplasia, Sayah *et al.* found that of the total of 53 patients with adenomas, 27 (51%) patients had low-grade dysplasia, and 26 (49%) patients had high-grade dysplasia. At the same time, Meijer *et al.* found that 40 (68%) of 59 patients have no low-grade dysplasia. In comparison, 32% have high-grade dysplasia.<sup>[4,14,15,24-27]</sup> About 70% of all polyps are adenomatous, making it the most common type, followed

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by hyperplastic. Serrated polyps may become cancerous, and the inflammatory polyps most often occur in people with inflammatory bowel disease.<sup>[4,7,8,16-19]</sup>

In Duhok, Iraq, they found that hyperplastic polyps formed the most everyday morphologic nonneoplastic category 38.71%, juvenile/retention polyps 20.43%, inflammatory polyps 14.78%, hamartomatous polyps 1.08%. In contrast, Al-Khazraji found that 40% of the removed polyps were tubular adenomas, tubulovillous adenomas in 20%, villous adenomas in 10%, and hyperplastic polyps in 5%.<sup>[20,21,28]</sup> Amarapurkar *et al.*<sup>[6]</sup> found that 52.4% were adenomatous, followed by 15.1% inflammatory, 15.1% hyperplastic, and 6.2% hamartomatous polyps. Roughly 15% of polyps spotted in colon cancer screening are villous or tubulovillous adenomas. At the same time, El-Badry found that the most prevalent type was a hyperplastic polyp, which was reported in 35.8%.<sup>[10,29-31]</sup> Patients with CRP may be presented with rectal bleeding, abdominal pain, diarrhea, and anemia, while uncommon presentations may be intussusception, intestinal obstruction, or ascites. However, Rathi and Haghi found that rectal bleeding presented symptoms in 95.8% and 78.5% of cases.<sup>[9,22,32-34]</sup> First-degree relatives of a person diagnosed with CRP before the age of 60 years have an increased risk of developing polyps compared to the general population.<sup>[23,24]</sup>

We conducted this study because of the clinical significance of these lesions, which may turn into malignancy, to make clinicians and the public aware of the problem and to check whether there is any increase prevalence of the disease during the period of the study in comparison to previous studies conducted in Iraq.

The aim of the study was to determine the frequency of CRP in Iraqi patients according to age and gender and compare it with previous studies, evaluate the clinical presentation and histopathologic types of CRP in our patients, and determine the site and size of different types of CRP.

## MATERIALS AND METHODS

It is a cross-sectional study conducted in the medical city of Baghdad, Iraq, between May 2020 and September 2022.

### Sample size and collection

The total number of colonoscopy done in the medical city/GIT center during the study period was 2658, from which 100 patients with the diagnosis of CRP was studied. The males comprised 60 while females were 40, and the ages ranged from 4 to 75 years. The sample size was collected according to available files of admitted patients to gastroenterology and hepatology teaching hospital.

### Inclusion criteria

Those who underwent colonoscopy screening due to symptoms such as bleeding per rectum, abdominal pain,

past or family history of colon polyp, inflammatory bowel disease, chronic diarrhea, and anemia.

### The exclusion criteria

1. History of colorectal cancer or colectomy before doing the colonoscopy.
2. Incomplete colonoscopy or incomplete clinical information.
3. Ambiguous or inconclusive histopathologic report.

For each colonoscopy description, we recorded the following data: date, quality of bowel preparation, presence of polyps, site of the polyp, and size and number of the polyps were recorded for age and gender. Some of the included patients were followed up on their condition after diagnosis.

### Statistical analysis

Statistical analysis was conducted using Statistical Package for the Social Sciences (SPSS, Chicago, Illinois), 26.0. 26.0 (SPSS, Chicago, Illinois). Continuous variables were presented as mean with standard deviation or medians with interquartile range and were matched by Student's *t* test or Mann-Whitney *U* test. Categorical variables were stated as frequencies with percentages and were analyzed by  $\chi^2$  test. Logistics regression was applied to assess the factors associated with CRPs in the cross-sectional study. *P* value <0.05 was considered to be statistically significant.

### Ethical considerations

The study was approved by the Administration of the Gastroenterology and Hepatology Hospital, Baghdad Medical City, as it was done on the case files of patients who underwent colonoscopy during the study period; the study didn't involve any harm to the patients (no. 900/14/06/2022).

## RESULTS

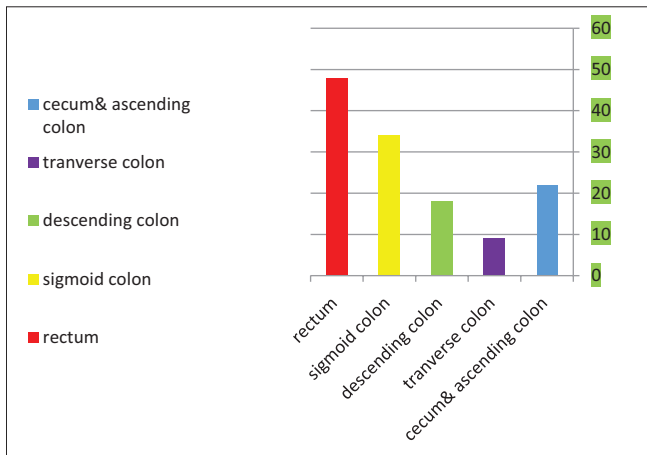
The most common age group affected was 46–59 years old, while the least commonly affected group was between 4 and 17 years old and in males more than females, 54% but without a significant statistical difference (*P*-value = 0.485) as shown in Table 1.

**Table 1: Distribution of colorectal polyp (CRP) according to age and gender**

Age	Male	Female	Total %	<i>P</i> -value
4–17	4	5	9	
18–31	6	9	15	
32–45	12	12	24	
46–59	18	9	27	
60–75	14	11	25	
	54	46	100	0.485

**Table 2: Relationship between site and types of colorectal polyps**

Site	Hyperplastic	Inflammatroy	Hammatomatous	Juvenile	Villous adenoma	Tubular adenoma	Tubulovillous adenoma	Traditional serrated adenoma	Total	P-value
Cecum and ascending colon	6	4	0	1	1	8	1	1	22	
Transverse colon	3	0	0	0	0	5	1	0	9	
Descending colon	2	5	0	2	0	5	4	0	18	
Sigmoid colon	3	3	0	4	1	9	14	0	34	
Rectum	4	10	1	9	3	6	15	0	48	
									100	<0.001



**Figure 1: Sites of colorectal polyps**

**Table 3: Relationship between size and types of colorectal polyps**

Type of colorectal polyps	Size (median)	Size
Hyperplastic	0.6	0.2–1 cm
Inflammatory	1.1	0.2–2 cm
Hamartomatous	1.2	1.2 cm
Juvenile	1.45	0.4–2.5 cm
Villous adenoma	2.75	1.5–4 cm
Tubular adenoma	0.6	0.2–1.3 cm
Tubulovillous	1.6	0.2–3 cm
Traditional serrated adenoma	1.2	1.2 cm
P-value		0.901

There is a significant relationship between site and types of CRP, where the rectum showed 48% involvement, followed by the sigmoid colon at 34%. In comparison, the least common transverse colon, 9% with tubulovillous adenoma, is the most common 35% followed by tubular adenoma 33% while the least common traditional serrated adenoma, 1% with statistically significant *P*-value <0.001, as shown in Table 2 and Figure 1.

The relationship between size and types of CRPs is that villous adenomatous polyps look of large size ranging from 1.5 to 4cm, tubulovillous adenomas 0.2–3cm, while hyperplastic polyps range from 0.2 to 1cm,

**Table 4: Degree of dysplasia in colorectal polyps**

Degree of dysplasia	%
No dysplasia	45
Low grade	35
High grade	20
P-value	0.009

**Table 5: Distribution of colorectal polyps according to types**

Type	Count	%
Hyperplastic	17	17
Inflammatory	14	14
Hamartomatous	1	1
Juvenile	15	15
Villous adenoma	5	5
Tubular adenoma	22	22
Tubulovillous adenoma	25	25
Traditional serrated adenoma	1	1
Total	100	100
P-value		<0.001

with no significant statistical difference between them (*P*-value = 0.9), as shown in Table 3.

The degree of dysplasia of CRP, no dysplasia is the most common at 45%, followed by low-grade 35%. In comparison, the high grade is the least common 20% with a significant statistical difference (*P*-value = 0.009), as shown in Table 4.

Distribution of CRP according to types, tubulovillous adenoma is the most common type 25% followed by tubular adenoma 22% while hamartomatous polyps and traditional serrated adenomas, each of them 1% with a significant statistical difference (*P*-value < 0.001), as shown in Table 5.

The relationship between the type of CRP with clinical presentation, where lower gastrointestinal bleeding is the most common presentation 25% followed by positive family history, including familial adenomatous polyposis 23% while anemia is the least common presentation 5%

**Table 6: The relationship between types of CRP and clinical presentation**

Presentation	Hyperplastic	Inflammatory	Juvenile	Hamatomatous	Villous adenoma	Tubular adenoma	Tubulovillous adenoma	Traditional serrated adenoma	Total
Lower GIT bleeding	1	3	5	1	3	4	8	0	25
Chronic diarrhea	3	5	0	0	0	0	0	0	8
Abdominal pain	5	3	3	0	0	2	0	0	13
Anemia	0	2	0	0	0	0	3	0	5
Family history (FAP)	2	1	0	0	5	8	6	1	23
History of inflammatory bowel disease	4	8	0	0	3	2	0	0	17
Others (intestinal obstruction, ascites)	3	2	2	0	2	0	0	0	9
<i>P</i> -value <0.001									100

FAP: familial adenomatous polyposis

with a significant statistical difference ( $P$ -value < 0.001), as shown in Table 6.

## DISCUSSION

CRPs are not uncommon in the Iraqi population, and their significance is associated with transformation to malignancy, precisely specific subtypes. The most common age group affected in this study was 46–59 years old (27%), while the least common in young age ≤17 years old this is comparable to previous studies.<sup>[6-13]</sup> It may be related to recurrent exposure of colonic mucosa to stressors like chemicals, toxins and infectious agents, etc., as well as the use of colonoscopy frequently to diagnose GIT complaints and old ages is a risk factor for developing CRPs (Rundle AG) 26. We found that the frequency of CRP was more common in males than females. However, it is statistically not significant ( $P$ -value 0.48), similar to previous studies in Iraq and other countries,<sup>[9,10,16]</sup> which may be related to smoking and being overweight more common in males than females that act independently to increase the incidence of CRP.

The most common site involved by CRP is the rectum (48%), followed by the sigmoid colon (34%), and the least is the transverse colon (9%) with a significant statistical difference ( $P$ -value < 0.001), which is in agreement with earlier studies.<sup>[4,10,16,17,19,28]</sup> Regarding the types of CRP, tubulovillous adenoma is the most common type, which constitutes (35%) of all types, followed by the tubular adenoma (33%), while the least common is traditional serrated adenoma (1%) with a  $P$ -value < 0.001, which is similar to other studies done in Iraq<sup>[15,16]</sup> with less percentage found by Amarapurkar *et al.* and El-Badry,<sup>[6,17]</sup> although there is no significant statistical difference between the current and these studies. The different polyps ranged from 0.2 to 4 cm, with large sizes found in villous adenomatous type without a significant statistical difference ( $P$ -value 0.910); a similar finding was found in previous studies,<sup>[8,18,19]</sup> probably tending to change to malignancy.

The results in this study also found that no dysplastic changes in 45% of all types while low-grade dysplasia was found in 35%; however, high-grade dysplasia constitutes 20% with a significant statistical difference ( $P$ -value 0.009), a similar finding to a study done by Meijer *et al.* but in contrast with Sayah *et al.* this difference may be due to different sampling techniques.<sup>[26,27]</sup>

Regarding the distribution of CRP, we found that tubulovillous adenoma is the most common type 25% followed by tubular adenoma 22% with the least common types being hamartomatous polyps and traditional serrated adenomas, each of them 1% with a significant statistical difference ( $P$ -value <0.001), a similar finding observed by Al-Khazraji *et al.*<sup>[15-17]</sup>. However, in Duhok, they found that hyperplastic polyps were most common, forming 38.7% of the study, but hamartomatous polyps were almost similar to our study; this may be related to different lifestyles and effects of different risk factors of CRP. Lower GIT bleeding was the most common clinical presentation of CRP in our study, constituting 25%, followed by positive family history, including familial adenomatous polyposis at 23%, similar to previous studies<sup>[9,12,13]</sup>. In comparison, anemia constitutes 5% of the presentation of our cases, probably related to early presentation and detection as well as adequate nutrition.

## CONCLUSION

The most common age group affected was 46–59 years, with male to female ratio is 1.17, and the rectum comprised 48% of the sites involved. Villous adenoma has the most significant size among all types. No dysplasia was observed in 45% of CRP types, while high-grade dysplasia was detected in 1/5th of cases. Lower GIT bleeding and positive family history were the most common clinical presentation.

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**Conflicts of interest**

There are no conflicts of interest.

**REFERENCES**

- Mareth K, Gurm H, Madhoun MF. Endoscopic recognition and classification of colorectal polyps. *Gastrointest Endosc Clin N Am* 2022;32:227-40.
- Pan J, Cen L, Xu L, Miao M, Li Y, Yu C, *et al.* Prevalence and risk factors for colorectal polyps in a Chinese population: A retrospective study. *Sci Rep* 2020;10:6974.
- Song M, Emilsson L, Roelstraete B, Ludvigsson JF. Risk of colorectal cancer in first degree relatives of patients with colorectal polyps: Nationwide case-control study in Sweden. *BMJ* 2021;373:n877.
- Sayah HA, Talabani DA, Shubber AH, AL-Khalidi NM, Jarallah S. Colorectal polyps clinical, endoscopic, and histopathological features. *Karbala J Med* 2006;1:17-26.
- Herszényi L. The "Difficult" colorectal polyps and adenomas: Practical aspects. *Dig Dis* 2019;37:394-9.
- Amarapurkar AD, Nichat P, Narawane N, Amarapurkar D. Frequency of colonic adenomatous polyps in a tertiary hospital in Mumbai. *Indian J Gastroenterol* 2016;35:299-304.
- Rathi C, Ingle M, Pandav N, Pipaliya N, Choksi D, Sawant P. Clinical, endoscopic, and pathologic characteristics of colorectal polyps in Indian children and adolescents. *Indian J Gastroenterol* 2015;34:453-7.
- Al-jameel HH, Alhibaly HA, Al Ameri AM. Prevalence of colon polyps detected in patients did colonoscopy in Karbala Gastroenterology Centre. *Karbala J Med* 2020;13:2267-72.
- Al-Khazraji KA, Hashim MK, Hashim MK, Abbas WK, Dhahir MM. Histopathology of polyps and its clinical correlation in sample of Iraqi patients undergoing colonoscopic examination. *Global J Health Sci* 2021;13:106-14.
- El-Badry AI, Abdalla MN, Aref WM, Kamel MH, Ishak EA, Farah BSH. Prevalence of colonic polyps among Egyptians, retrospective study. *J Am Sci* 2012;8:394-96.
- Bhandari P. Polyp cancers: size matters! *Endoscopy* 2019;51:407-8.
- Church J, Erkan A. Scope or scalpel? A matched study of the treatment of large colorectal polyps. *ANZ J Surg* 2018;88:177-81.
- Rex DK, Dekker E. How we resect colorectal polyps < 20 mm in size. *Endoscopy* 2018;50:1112-5.
- Khassaf MB, Qasim BJ. Histopathological assessment of colonoscopic biopsies in patients with bleeding per rectum. *Med J Babylon* 2022;19:203-9.
- Meijer GA, Baak JP. Quantification of proliferative activity in colorectal adenomas by mitotic counts: Relationship to degree of dysplasia and histological type. *J Clin Pathol* 1995;48:620-5.
- Ashktorab H, Brim H, Hassan S, Nouraie M, Gebreselassie A, Laiyemo AO, *et al.* Inflammatory polyps occur more frequently in inflammatory bowel disease than other colitis patients. *BMC Gastroenterol* 2020;20:170.
- Valle L. Recent discoveries in the genetics of familial colorectal cancer and polyposis. *Clin Gastroenterol Hepatol* 2017;15:809-19.
- Ashtiani MTH, Monajemzadeh M, Motamed F, Tabriz HM, Mahjoub F, Karamian H, *et al.* Colorectal polyps: A clinical, endoscopic and pathologic study in Iranian children. *Med Princ Pract* 2009;18:53-6.
- Aldrich LB, Askari FK, Bishu S, Brady GF, Chang JW, Lingzhi V, *et al.* Available from: <https://www.uofmhealth.org/conditions-treatments/digestive-and-liver-health/colon-and-rectal-polyps> [Last accessed on 30 Jul 2022].
- Intisar SP, Sara MH. Gastrointestinal polyps in Duhok-Iraq. A practical histopathological study. *Duhok Med J* 2021;15:13-28.
- Schoeffl R, Ziachehabi A, Wewalka F. Small colorectal polyps. *Dig Dis* 2015;33:38-41.
- Almadi MA, Allehibi A, Aljebreen MA, Alharbi OR, Azzam N, Aljebreen AM. Findings during screening colonoscopies in a middle eastern cohort. *Saudi J Gastroenterol* 2019;25:20-6.
- Nishihara R, Wu K, Lochhead P, Morikawa T, Liao X, Qian ZR, *et al.* Long-term colorectal cancer incidence and mortality after lower endoscopy. *N Engl J Med* 2013;369:1095-105.
- Lindberg MR. Large intestine. In: *Diagnostic Pathology Normal Histology*. 2nd ed. Lindberg/Lamps; 2018. Chapter 51. p. 238-9.
- Zbuk KM, Eng C. Hamartomatous polyposis syndromes. *Nat Clin Pract Gastroenterol Hepatol* 2007;4:49.
- Pasha SF. Applications of colon capsule endoscopy. *Curr Gastroenterol Rep* 2018;20:22.
- Goldblum JR. Large bowel. In: *Rosai and Ackerman's Surgical pathology*. 11th ed. 2018. Chapter 17. p. 668-76.
- van Lanschot MCJ, Carvalho B, Rausch C, Snaebjornsson P, van Engeland M, Kuipers EJ, *et al.* Molecular profiling of longitudinally observed small colorectal polyps: A cohort study. *eBioMedicine* 2018;39:292-300.
- Rausch C, Carvalho B, Fijneman R, Gerrit M, Mark van Wdeiel: QDNA seq FLOW: A computational analysis workflow of DNA copy number aberrations from low-coverage whole genome sequencing reads. Presented at Joint 25th Annual International Conference on Intelligent Systems for Molecular Biology (ISMB) and 16th European Conference on Computational Biology (ECCB) 2017.
- Dunn ALJ, Gonzalez RS. Colon, polyps, tubular adenoma. Available from: <https://www.pathologyoutlines.com/topic/colontumortubularadenoma.html>. [Last accessed on 20 Aug 2022].
- Ramnani DM. Neoplastic polyps. Available from: <https://www.webpathology.com/image.asp?n=30&Case=226> [Last accessed on 30 Sep 2022].
- Brosens LA, Langeveld D, van Hattem WA, Giardiello FM, Offerhaus GJ. Juvenile polyposis syndrome. *World J Gastroenterol* 2011;17:4839-44.
- Al-Jenabi NA, Kadhem AA, Abbas HF. Proportion of colorectal cancer proved by a histopathological study on patients who underwent colonoscopy. *Med J Babylon* 2019;16:141-4.
- Kumar M, Shankar M, Joshi R, Kumar Prasad S. To identify the risk factors associated with development of anterior abdominal wall hernia. *Med J Babylon* 2022;19:219-26.