Original Article

The Frequency of Gastrointestinal Polyps in Iranian Population

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ABSTRACT

Background and Aims: **Gastrointestinal polyps are proliferative or neoplastic mucosal lesions. The most important point about these polyps is risk of malignancy of them. This study was performed to determine type and frequency of polyps of gastrointestinal tract in Iranian population according to their locations.**

Materials and Methods: **Totally, 210 patients referred to Rasoul-e-Akram Hospital in years 2006-2010 and had pathology report of gastrointestinal polyps were included in the study. Frequency of gastrointestinal polyps was determined according to type, histological subtype, location, age and sex. The data was analyzed by software SPSS 16.**

Results: **Of participants, 129 patients were male (61.4%) and 81 (38.6%) were female. The mean age of patients was 58.4±32 yr. The mode of age interval was 70-80 yr (25.2%). The most frequent presenting symptom was lower gastrointestinal bleeding as melena or hematochezia (31%). Colon and sigmoid were site of most of gastrointestinal polyps (74.2%). The most prevalent type of gastrointestinal polyps was adenomatous polyp which was reported in 175 patients (84.3%). The most common types of colonic and gastric polyps were adenomatous and hyperplastic types respectively.**

Conclusion: **Our data is highly confirmatory to previous studies regarding association of polyp with advanced age and male sex, the most prevalent symptom and site of gastrointestinal polyps, and the most common types of colonic polyps. The frequency of gastric polyps in our population differs with some studies.**

Keywords: **Colonic Polyps , Epidemiology, Iran**

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Introdction

Gastrointestinal polyps are proliferative or neoplastic mucosal lesions, projecting into gastrointestinal lumina. Most of the polyps are asymptomatic (1) but some of them as juvenile polyps present with rectal bleeding (2). The most important point about these polyps is risk of malignancy in certain kind of polyps and polyposis (1). Many scientists believe that most of colorectal polyps arise from preexisting adenomatous polyps (3).

Determination of potential risk of malignancy of the polyp is very important for treatment approach to it. If the polyp has high grade dysplasia, foci of invasive carcinoma (4) or is associated with regional lymph node metastasis, colonoscopic resection of polyp is under debate (5). The polyp size (6) and histological type are two important factors for development of cancer in a polyp. In fact the larger the amount of villous portion and size of the polyp, the higher the risk of malignancy of the polyp (6).

The frequency and distribution of gastrointestinal polyps may vary in different populations according to genetic, socioeconomic status and life habits. There were few studies about frequency and distribution of gastrointestinal polyps in Iranian population. The study of Sharifi *et al.* (7) about gastrointestinal polyps was performed on pediatric and not adult Iranian population.

There were also two studies performed in Tabriz City by Bafandeh *et al.* (8, 9), about colonic polyps which revealed the majority of polyps are left sided and the incidence of adenomas and their histology appear comparable to data for western patients, but with a significantly lower rate for synchronous neoplastic lesions (8). They found that the low prevalence of colorectal neoplasms as well as the less advanced pattern of adenomas in Iran is compatible with other data from Asia and the Middle East, contrasting with western countries (9).

The newest article we found in English literature about gastrointestinal polyps in Iranians was the study of Khodadoostan *et al.*, which similar to the article of Bafandeh *et al.*, included only colonic polyps in the study and not polyps of whole gastrointestinal tract. In their study, most of colonic polyps were neoplastic. Most of the adenomas were left-sided but the majority of carcinomas were right sided (10).

This study aimed to determine the frequency of gastrointestinal polyps referred to Department of Pathology of Hazrat Rasoul Akram Hospital between years 2006-2010 according to location and histological type and also to assess benign or malignant potential of polyps and association of their distribution with patients' age and sex. This single center study may help to know the characteristics of gastrointestinal polyps in adult Iranian population.

Materials and Methods

In this retrospective cross sectional descriptive study a total of 210 patients referred to Department of Gastroenterology of Rasoul -e- Akram Hospital in years 2006-2010 and the diagnoses of their pathologic specimens (performed by endoscopy, colonoscopy or surgery) were reported as gastrointestinal polyps in their hospital files, were included.

By reviewing the pathology slides and studying the patients' hospital files, data of all the variables were put in check lists and analyzed by SPSS 16 software. This study has no intervention on patients or their material in the hospitals (paraffin embedded blocks or slides).

In all steps of the study, the data of patients was collected and saved by secrete.

Results

A total of 210 patients who underwent endoscopy or colonoscopy and biopsy were studied. Totally, 129 (61.4%) patients were male and 81 (38.6%)

were female. The mean age of patients was 58.4±32 years. The minimum and maximum of patients' age were 16 and 81 years respectively. The polyps were more prevalent between 70-80 yr (25.2%) (Fig. 1).

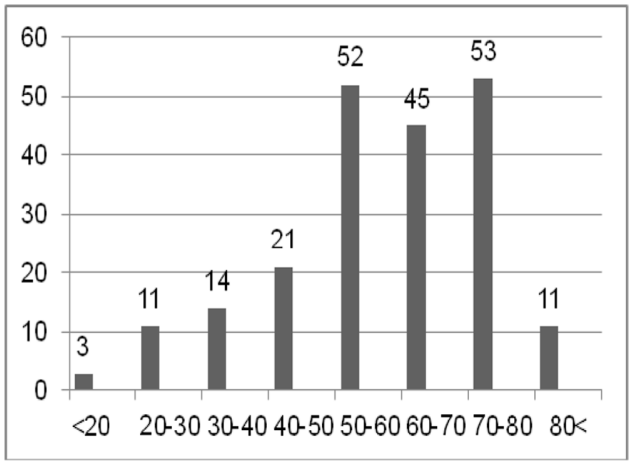

Fig. 1- Age distribution of patients is shown by number: The polyps are more frequent between 50-80 years

8.5% of patients were evaluated due to previous history or family history of polyp.

The most frequent clinical symptom was lower gastrointestinal bleeding as melena or hematochezia 66 (31.4%).

Other clinical reasons for patients referring to hospital were as follows: Anemia 20 (9.5%), abdominal pain 18 (8.5%), obstruction 7 (3.3%), diarrhea in 4 (1.9%), constipation in 3 (1.4%), dyspepsia 2 (1%), dysphagia 1 (0.5%) and weight loss 1 (0.5%) of patients. 70 patients (33.5%) had no history or symptom.

The prevalence of polyps according to age intervals is shown in Fig. 1. Colon and sigmoid were site of most (74.2%) of gastrointestinal polyps.

The distribution of location of polyps is displayed in Table 1. The precise site of 57 (27%) polyps of colon was not mentioned.

Table 1: Distribution of gastrointestinal polyps according to their locations in gastrointestinal tract is shown.

Location	Number of polyps (%)
Esophagus	1 (0.5)
Stomach	9 (4.3)
Colon (ascending, transverse, descending & not otherwise specified)	114 (54.2)
Sigmoid colon	42 (20)
Rectum	42 (20)
Anus	2 (1)
Total	210 (100)

Histological types of polyps were as follows (Table 2): Adenomatous polyps 175 (83.3%), hyperplastic 15 (7.1%), inflammatory 14 (6.7%), juvenile 4 (1.9%) and fibroepithelial 2 (1%). Adenomatous polyps are the most prevalent histological type (Fig. 2).

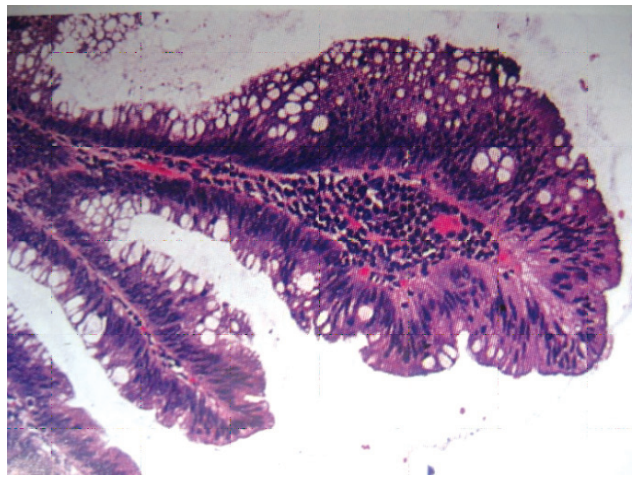

Fig. 2- Microscopic features of an adenomatous polyp which was the most common type of gastrointestinal polyp in our study

The subtypes of adenomatous polyps were as follows: Tubular 123 (70.3%), tubulovillous 24 (13.7%) and villous 28 (16%).

Table 2- Distribution of histological types of polyps according to their locations in gastrointestinal tract

Site / Polyp type	Esophagus	Stomach	Colon	Sigmoid	Rectum	Anus	
Tubular	0	2	76	27	18	0	
Tubulovillous	0	0	12	6	5	1	
Villous	0	0	15	4	8	1	
Hyperplastic	1	5	5	3	1	0	
Inflammatory	0	2	5	1	6	0	
Juvenile	0	0	1	1	2	0	
Fibroepithelial	0	0	0	0	2	0	
Total	1	9	114	42	42	2	210

Low grade dysplasia was present in 160 (91.4%) of adenomatous polyps and high grade dysplasia in 15 (8.6%) of them.

There was association between histological type of polyp and location, as most of adenomatous polyps were noted in colon (K2, *P*=0.000).

There was also statistical association between type of polyp and age, as with increment of age, number of polyps was also increased and most of them were tubular adenomatous type (K2, *P*=0.000).

Discussion

The polyps constitute a significant proportion of gastrointestinal pathology samples. This may attribute to rapid growth of urbanization, low physical activity, obesity (11) and change in diet regimen (12). The polyps may be obtained by endoscopes or through surgery.

Endoscopic mucosal resection of polyps are claimed to be safe and effective (13, 14) even for removing benign appearing very large (exceeding 4 cm in size) colorectal neoplasms (14). So recently, many polyps are resected by endoscopes. Although there are also some articles which claim against it (15). Microscopic evaluation of polyps is very important especially for ruling out foci of malignancy.

The incidence, prevalence of types and location of gastrointestinal polyps may vary in different races and studies in different populations were performed to determine the distribution and frequency of gastrointestinal polyps (8-10, 16).

One fifth of pathology specimens in Department of Pathology, Rasoul -e- Akram Hospital which is a general pathology department in Tehran City are endoscopic, colonoscopic or other gastrointestinal specimens which were 5563 specimens between years 2006-2010. A total of 210 cases were polypectomies which most of them were obtained by endoscopes or colonoscopes.

The most prevalent polyp type was adenomatous type (84.3%). Colon and sigmoid were the most common sites for gastrointestinal polyps (74.2%). The mode of age interval was 70-80 years (25.2%). Most of polyps were noted in male (61.4%). The most frequent presenting symptom was lower gastrointestinal bleeding (31.9%).

In study of Sharifi *et al.* which was performed on pediatric Iranian population, 75.8% of polyps were in colon and 24.1% were in stomach (7). The gastrointestinal polyps were more common in male and the most common symptom of patients with colonic polyps was rectorrhgia. In their study, histological subtypes of colonic polyps were juvenile (52.7%), adenomatous (4.5%), inflammatory (12.7%) and hyperplastic (10%). Histological subtypes of gastric polyps

were hyperplastic (85.7%), adenomatous (8.5%) and hamartomatous (5.7%). These results are concordant with ours in some aspects but this study was performed on pediatric population, so the most common colonic polyp was also different from ours and was juvenile polyp.

Our study has similar results regarding colonic polyps with the study performed by Khodadoostan *et al*. in Iranian population (10). In their study as our study, most of colonic polyps (91%) were neoplastic. Adenomas were present in 85% cases, and more than half of them (56%) were left-sided but most of carcinomas (65.5%) were right sided. But this study only included colonic polyps and not all gastrointestinal polyps as we studied in our work. Their results are in contrary to Blumberg *et al*. results published in 2009 which concluded that colonic polyps located distal to the splenic flexure are associated with the highest risk of cancer (17).

The age related risk of colon polyps are also emphasized in other studies as study of Nam *et al*., performed (16). They found that incidence of colon polyps in more than 50-year old patients was 3.2-fold greater compared to less than 50-year old patients.

In the study of Joo *et al*., the risk factors for colonic polyps were age, male sex, diabetes mellitus and those for advanced colonic neoplasms were age (18). The results were similar to our results regarding age and sex.

The most common type of gastric polyp in our study was hyperplastic polyp which is similar to study of Gencosmanoglu *et al*. (19) and Jain *et al* (20) but is different from study of Carmack *et al*. (21). Subtypes of gastric polyps in study of Carmack *et al*. were as follows; 77% fundic gland polyps, 17% hyperplastic, 0.69% adenomatous and 1% inflammatory. Malignancies were reported in more than 2% of cases. The hyperplastic polyps are usually asymptomatic and are less than 1 cm in diameter and are associated with chronic gastritis or *Helicobacter pylori* gastritis. Contrary to the previous belief, they may harbour adenomatous changes or dysplastic foci, so microscopic evaluation of them is very important. They are also the most frequently identified gastric polyps in pediatric population (22).

The second most common types of gastric polyps in our study were inflammatory (1%) and adenomatous types (1%). Our results are similar to study of Sivelli *et al*. (23) as the most prevalent gastric polyps in this study in Italian population were hyperplastic, adenomatous and inflammatory polyps. Our results are in contrary to the results of Gencosmanoglu *et al*. (19) and Borch *et al*. (24) regarding second most prevalent type of gastric polyps. In the study of Gencosmanoglu *et al*., the frequency of gastric polyps were as follows; hyperplastic polyps (46%), foveolar hyperplasia (18%), and fundic gland polyps (14%) respectively. The results of Borch *et al*. regarding the frequency of gastric polyps were as follows: hyperplastic (61%), fundic gland (21%), adenoma (12%), carcinoid (2%), hamartoma (2%), and inflammatory fibroid (1%). These differences may be due differences in races and diet regimens.

Esophageal polyps are rare (25) and we had only 1 case in 210 gastrointestinal polyps which was of hyperplastic type.

Conclusion

In our study which was performed in adult Iranian population, colon and sigmoid were site of most of gastrointestinal polyps. The polyps were associated with advanced age and male sex. In advanced age the adenomatous polyps were increased and most of them were of tubular type. The most common type of colonic polyp was adenomatous type. Lower gastrointestinal bleeding was the most prevalent symptom. These results seem rather constant in different populations. The most frequent types of gastric polyps in our population were hyperplastic, adenomatous and inflammatory types which differ in various populations with different races

and diet regimens. Esophageal polyps were also uncommon in our population.

As the most common type of gastrointestinal polyp in adult Iranian population is adenomatous type which has risk of malignant transformation, the screening program is recommended for cancer prevention.

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