ORIGINAL ARTICLE

Frequency of Colonoscopic Polyp Detection Rate

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ABSTRACT

Background: Over the past few years, colon cancer cases have been increasing in Asian countries due to a shift in lifestyle.It is estimated that it takes at least 10 years for a polyp to progress to a carcinoma. Because this process is slow and takes time, early detection by colonoscopy can be very effective in reducing the incidence rate of colorectal cancer cases.

Aim: T**o** define the rate of polyp detectionin our populationhence provide chance of surveillance and possible early treatment.

Study design: Retrospective study

Place and duration of study: Gastroenterology Endoscopy Unit, Rehman Medical Institute, Peshawar from 1st January 2015 to 31st March 2019.

Methodology: One thousand five hundred and fifty one colonoscopies performed at inpatient and outpatient departments. All the patients were included who had undergone limited colonoscopy, cecal intubation and ileal intubation. Patient who were diagnosed previously with polyps on colonoscopy and those who had follow up visits were excluded.

Results: There were 899 (57.96%) males and 652 (42.04%) females. The ethnicities were Pakistanis, 1162 (74.92%) and Afghanis (24.95%). Gastrointestinal bleeding(30.75%) was the most common complaint and indication. One hundred and thirteen patients had at least 1 polyp. Overall polyp detection rate (PDR) was113 (7.29%) of which 71 were in males and 42 were in females and detection rate of polyp was almost equal in both the ethnicities. Polypswere more commonly detected in the age range 20-39 years (27.41%), followed by ages ranging 60-79 years (6.03%). Majority of the polyps were located in the rectal region (47.97%) followed by sigmoid region(21.24%), cecum, ascending and transverse colon (7.32%) and descending colon (6.50%).

Conclusion: Colonoscopy remains an effective tool in detecting colonic polyps and a measure to prevent advanced disease by providing a chance for surveillance and polypectomy if required. The PDR from colonoscopy is 7.23% in our Institute.

Keywords: Colonic polyps; Colon, Descending, Colon; Transverse; Colon, Sigmoid; Colonoscopy

INTRODUCTION

Over the past few years, researchers have a seen a rise in colorectal cancer in South Asia. Among gastrointestinal tract malignancies, colorectal cancer is one of the most common one.[1]

Every year it is estimated that 1.4 million new cases of colorectal cancer are diagnosed and it accounts for 8-12% mortality in the world. It is the 4th leading cause of mortality in the world.[2]

The pathophysiology of colorectal cancer varies. It usually arises from polyps in the colon which may progress from polyp to adenoma to carcinoma depending on the type of polyp and genetic predisposition. On average, it takes about at least 10 years for this progression to occur.[3]Because colorectal cancer is detected late and progression of polyp to carcinoma is a long process, early detection of these polyps and their removal are effective in reducing the incidence and mortality rate of colorectal cancer.[4]

Muller and Sonerberg[5]have shown that endoscopic procedures such as colonoscopy could significantly decrease the risk of developing colorectal carcinoma due to early detection and thisprotective effect can last as long as six years. Colonoscopy rarely misses a polyp, however, the chances of missing a polyp are increased when the size of polyp is less than 10mm [6] Polyp detection rate can be increased by use of endocuff attachment to the colonoscope. Studies have shown an increase in 14% detection rate by this method.[7]

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MATERIALS AND METHODS

This is a retrospective study held at Gastroenterology Endoscopy Unit, Rehman Medical Institute, Peshwar from 1stJanuary 2015 to 31stMarch 2019. Demographics, indication for colonoscopy, colonoscopy findings, numberof polypswere examined for each person. Those patients who visited Gastroenterology outdoor, indoor patients and internally referred from other wards and by different hospitals/clinics were included. All the colonoscopies were performed by experienced and trained personnel. In this study all the patients were included who had undergone limited colonoscopy, cecal intubation and ileal intubation. Only those subjects were included in this study whosecaecal intubation was successful meaning their colonoscopy was successful. Polyp Detection Rate (PDR) was considered. The PDR was defined as detection of one or more polyp during the procedures. Patients who didn't meet the inclusion criteria in our study either had one or more of the following reasons1) unsuccessful colonoscopy

(caecal intubation was not possible, due to inadequate bowel preparation, pain intolerance, any adhesions from previous surgeries), or inadequate data, or those who had a history of incomplete colonoscopy or had a previous history ofpolyps/gastrointestinal malignancy/any inflammatory bowel disease. The data was entered and analyzed through SPSS-25.

RESULTS

There were 42.04% females and 57.96% females with age range was 3-106 years and mean age was 43.21±18.52 years. Most of the patients were below 50 years (59.90%). The ethnicities included in our study were Pakistanis, with majority of cases, 1162 (74.92%) and Afghanis (24.95%). Only 2(0.13%) were from other ethnicities. Gastrointestinal bleeding (30.75%) was the most common indication for colonoscopy (Table 1).

Table 1: Patients' characteristics and colonoscopy findings (n=1551)

Variable	No.
Gender	
Male	899
Female	652
Age (years)	
<20	135
20-39	583
40-59	474
60-79	315
>80	44
Ethnicity	
Afghan	387
Pakistani	1162
Others	2
Indications	
Gastrointestinal bleeding	477
Constipation	132
Diarrhea	90
Abdominal pain	46
Anemia	72
Altered bowel habits	147
Others	587

Table 2: Characteristics of polyp (n=113)

Variable	No.	%
Size		
Small	45	36.58
Medium	29	23.58
Large	7	5.69
Location		
Cecum	9	7.32
Ascending colon	9	7.32
Transverse colon	9	7.32
Descending Colon	8	6.50
Sigmoid Colon	24	21.24
Rectum	54	47.79

Among the 1551 patients, 113 had at least 1 polyp. Overall Polyp Detection Rate (PDR) was 113 (7.29%), in which 71 (7.89%) were male and 42 (6.44%) were female. It is more in male then females. The detection rate of polyp was nearly equal in both the ethnicities. Polyps were more commonly detected in the Ages <20 years (27.41%), followed by ages ranging 60-79 years (6.03%). Majority of the polyps were in the rectal region (47.79%) followed by sigmoid region (21.24%),cecum, ascending and transverse colon (7.32%) and descending colon (6.50%). No mortality was reported during colonoscopy procedures (Tables 2-3).

Table 3: Detection Rate of Polyp (n=113)

Variable	No.	%
PDR	113/1551	7.93
Gender		
Male	71/899	7.89
Female	42/652	6.44
Ethnicity		
Pakistani	79/1162	6.80
Afghan	34/387	7.78
Age (years)		
<20	37/135	27.41
20-39	31/583	5.32
40-59	25/474	5.27
60-79	19/315	6.03
>80	1/44	2.27

DISCUSSION

From our study, PDR was 7.93, when comparing these statistics to similar studies conducted in other countries, we found out that our PDR is significantly low compared to Middle East[8,9], Korea [10]and Japan[11].

In the present study, we found that males in our case and younger age (below 40) were the strongest indicators for occurrence for colonic polyp detection. This higher rate of detection can be explained by a change in lifestyle, especially higher intake ofsmoked meat and increasing consumption of cigarettes, which is very common among males. Polyp detection rate among women was, however, low compared to men. Several factors can perhaps contribute to this statistic; women tend to smoke less and those in reproductive age tend to be on contraceptives which has a protective effect from the risk of developing a polyp[12].

Age is also another strong contributor to colonic polyp or colorectal cancer risk factors, and usually older age is directly proportional to prevalence of colonic polyps. In our study, however, most of the patients were under 40 years old, and 27.41% of those were less than 20 years old were discovered to have a polyp(s) during the procedure. These findings cannot be explained to as how polyps were more prevalent in younger age but the shift in the demographic is alarming.[13]

Afghan patient input in our hospital is high due to close proximity of Peshawar to Kabul, and therefore we have included Afghans in our study.However, our findings show that PDR in both theethnicities was nearly equal being 6.8% in Pakistanis and 8.78% in Afghans. Although the PDR in our hospital was low compared to other studies, these minimal differences between PDR of two ethnicities corresponds to a cross-sectional study conducted among patients of different ethnicities who went under colonoscopy in an endoscopy clinic and their conclusion was that race did not appear to be an important predictive factor[14].

In the current study, most of the polyps were found atthe rectum (47.79%)followed by the sigmoid colon (21.24%). These findings corresponds toother identical studies that showed similar results; distal colon was more susceptible todevelopment of polyps than proximal colon[15-18].

Majority of the polyps detected in our study were small sized (36.58%) Size of the polyp can be used as an important biomarker and can help in its clinical management and estimating risk of cancer.[14]

The study has faced some limitations. First, this was not a population-based study therefore the selection bias ofthe study population must be noted. Second, oursample included mostly symptomatic patients who presented with gastrointestinal complaints and were indicated for a colonoscopy. Estimates in this population may be different from screening studiesconsisting of individuals with no gastrointestinal symptoms.

Because this was a retrospective study and information was only obtained from previous hospital data, we were unable to study the family history of our subjects. Other weaknesses of this retrospective study include certain data such as timing of the procedure and endoscopy withdrawal time. This study however, provided information in our actual clinical settings, this reduces the biases which are seen in highly controlled studies.

CONCLUSION

The PDR was 7.93% in the Rehman Medical Institute. Gender and age of the patients were the most important predictors of the adenomas whereas PDR in all the ethnicities/races were approximately equal.

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