

Gender Wise Distribution of Characteristics of Colorectal Polyps in Pakistani Population

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ABSTRACT

Aim: To determine the gender wide distribution of the characteristics of colorectal polyps among the patients who underwent sigmoidoscopy at Liver Clinic, Lahore, Pakistan.

Methods: This retrospective analysis was carried out on the data of the patients who were diagnosed as having colorectal polyps during sigmoidoscopy from February 2010 to July 2017 at Liver clinic, 250 Shadman Lahore. The entire data was evaluated on SPSS version 25. Chi-square test for independence and Independent sample T-test were applied on qualitative and quantitative variables respectively to determine their significant association with the gender. Then, binary logistic regression analysis was also performed. The p-values were taken statistically significant if < 0.05 .

Results: Out of total of 82 patients having colorectal polyps, 73.2% male and 28.8% were female. The mean age of the male patients was 36.78 ± 18.99 years while the mean age of the female patients was 39.59 ± 16.39 years. There was no significant difference in the age of the two groups of the patients ($p = 0.541$). The mean distance of the polyp from anal verge in male patients was 16.88 ± 8.35 cm while the mean distance of the polyp from anal verge in female patients was 22.09 ± 12.75 cm. The polyps were significantly closer to anal verge in male gender as compared to female gender ($p=0.034$). The gender of the patients had no statistically significant association with presenting complaints ($p=0.774$) and presence of the stalk of polyp ($p=0.429$). The male patients had polyps significantly in their rectum ($p=0.024$), and solitary ($p=0.035$). Binary logistic regression model was significant, $p<0.05$. It explained 21.4% (Nagelkerke R^2) of the variance in the gender wise grouping of patients and correctly classified 75.6% of cases. Male had 3.092 times more likelihood risk of finding a polyp in the rectum as compared to female.

Conclusion: colorectal polyps are found in both male and female gender during sigmoidoscopic examination. these are solitary and frequently inside the rectum among the males as compared to the female gender. gender has no association with age, presentation complaints, and presence of the stalk of the polyp among the studied pakistani population

Keywords: colorectal polyps, gender, sigmoidoscopy, pedunculated, sessile

INTRODUCTION

Colorectal polyps are the intraluminal growths from the inner lining of the colon and the rectum¹. Their prevalence is about 30% among the middle-aged or elderly people in USA^{2,3}. Their incidence is more among the males than females⁴. Their behaviour can be benign or malignant⁵. Non-neoplastic polyps include inflammatory polyps, Juvenile polyps, Peutz-Jeghers polys and hyperplastic polyps⁶. Depending upon the presence of the stalk, they can be categorized into pedunculated and sessile polyps⁷. Based on the etiology, they can be sporadic or inherited⁸. These are responsible for lower gastrointestinal bleed especially in children, however; in adults, they are often diagnosed during surveillance lower gastrointestinal procedures⁹. Their early detection and removal especially neoplastic one lower the risk of the colorectal cancer¹⁰. Surveillance colonoscopy after polypectomy is obligatory to find and metachronous and synchronous polyps¹¹. Multiple studies about the characteristics of colorectal polyps are available in literature, however; studies addressing the characteristics differences among the male and female gender are scarce. Therefore, the objective of the present

study was to determine the gender wide distribution of the characteristics of colorectal polyps among the patients who underwent sigmoidoscopy at Liver Clinic, Lahore, Pakistan.

MATERIAL AND METHODS

This retrospective analysis was carried out on the data of the patients who were diagnosed as having colorectal polyps during sigmoidoscopy from February 2010 to July 2017 at Liver clinic, 250 Shadman Lahore. Demographic features of the patients including their age and gender were documented. Different features of the polyps were noted including distance from the anal verge (in centimeters), presence of the stalk, count of the polyps (single or more than one) and their location (rectum or above rectum). Presence of the stalk of the polyp defined it to be pedunculated while absence of the stalk of the polyp defined it as sessile. The entire data was evaluated on SPSS version 25. During descriptive interpretation of data, means and standard deviations were calculated for the presentation of quantitative variable, and frequencies and percentages were computed for qualitative variables. Chi-square test for independence and Independent sample T test were applied on qualitative and quantitative variables respectively to determine their significant association with the gender. Then, binary logistic regression analysis was also performed on the significant factors. The p values were taken statistically significant if <0.05 . Moreover, odds ratio along with

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their 95% confidence interval (CI) were also computed for each association.

RESULTS

A total of 82 patients were diagnosed having colorectal polyps, 60(73.2%) were male and 22(28.8%) were female (Fig. 1). The mean age of the male patients was 36.78±18.99 years while the mean age of the female patients was 39.59±16.39 years. There was no significant difference in the age of the two groups of the patients (p = 0.541). The mean distance of the polyp from anal verge in male patients was 16.88±8.35 cm while the mean distance of the polyp from anal verge in female patients was 22.09±12.75cm. The polyps were significantly closer to anal verge in male gender as compared to female gender (p=0.034). The gender of the patients having colorectal polyps had no statistically significant association with presenting complaints being PR bleed or other than PR bleed (p=0.774). The presence of the stalk i.e., pedunculated or sessile polyp had no statistical association with the gender of the patients (p=0.429). Among the 41 patients whose polyp location was rectum, 35(85.4%) were male while 6(14.6%) were female. Among the 41 patients whose polyp location was above rectum, 25(61%) were male while 16(39%) were female. The male patients had colorectal polyps significantly in their rectum (p=0.024).Among the 59 patients who had solitary polyps, 47(79.7%) were male while 12(20.3%) were female. Among the 23 patients who had more than one polyp, 13(56.5%) were male while 10(43.5%) were female. Male had significantly more solitary polyps (p=0.035) (Table 1).

A binary logistic regression analysis was performed to ascertain the likelihood gender difference in significantly

associated qualitative and quantitative factors. The logistic regression model was statistically significant, p<0.05. The model explained 21.4% (Nagelkerke R²) of the variance in the gender wise grouping of patients and correctly classified 75.6% of cases. Male had 3.092 times more likelihood risk of finding a polyp in the rectum as compared to female. Similarly, male had 4.33 times more likelihood chance of having a solitary polyp as compared to female gender (Table 2).

Fig.1: Gender of patients diagnosed having colorectal polyps

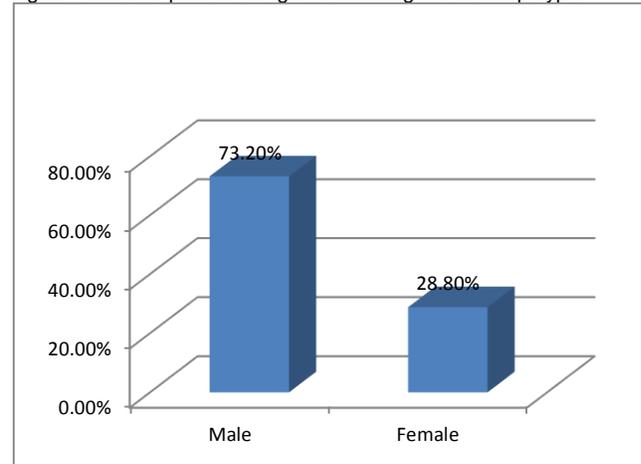


Table 1: Association of presence of Gastric vascular ectasias with different parameters (n = 225/2430).

Parameters /Categories*	Gender		Pvalue	Odd ratio with 95% Confidence interval
	Male	Female		
Mean Age (Years)	36.78±18.99	39.59±16.39	0.541	4.571 (-11.905 – 6.289)
Mean distance from anal verge (CM)	16.88±8.35	22.09±12.75	0.034	2.418 (-10.019 – -0.396)
Presenting complaint				
PR bleed	46 (74.2%)	16 (25.8%)	0.774	0.812 (0.267 – 2.469)
Other complaints	14 (70.0%)	6 (30.0%)		
Polyp location				
In rectum	35 (85.4%)	6 (14.6%)	0.024	3.733 (1.281 – 10.878)
Above rectum	25 (61%)	16(39%)		
Count of polyps				
Single	47 (79.7%)	12 (20.3%)	0.035	3.013 (1.065 – 8.524)
More than One	13 (56.5%)	10 (43.5%)		
Presence of stalk				
Yes (Pedunculated)	18 (66.7%)	9 (33.3%)	0.429	1.615 (0.586 – 4.451)
No (Sessile)	42 (76.4%)	13 (23.6%)		

*Chi-square test for independence was used for parameter 1&2 &Independent sample T-test was usedfor parameter 3,4,5 & 6

Table 2: Binary Logistic Regression Output with Co-efficient, Odds Ratio and their 95% CI

Risk Factors	B	S.E.	Wald-Statistic	p-value	Odds Ratio	95% C.I. for EXP(B)	
						Lower	Upper
Age	0.019	0.016	1.366	0.243	1.019	0.987	1.051
Polyp location (In rectum/Above rectum)	1.129	0.572	3.899	0.048	3.092	1.008	9.479
Count of polyps (Single/More than One)	1.466	0.658	4.968	0.026	4.330	1.193	15.711
Presence of stalk (Yes/No)	1.232	0.680	3.286	0.070	3.429	0.905	12.998
Constant	-3.315	0.992	11.175	0.001	0.036		

Nagelkerke R Square = 21.4% Cox & Snell R Square = 14.7%

DISCUSSION

Colorectal polyp's identification is a basic point for all performers who do endoscopic procedures. The easiness for both physician and the patient and the lower cost for sigmoidoscopy make it the initial tool; however all patients were also directed to undergo the complete colonoscopy after colonic preparation as per recommendations¹². TM McCashland et al¹³ revealed that males have higher prevalence of colorectal polyps than female and the risk of finding polyps increases with the age. Similarly, in Eli Penn's study¹⁴, male gender was predictive of finding a polyp on the lower gastrointestinal endoscopic procedure. Douglas A. Corley and his colleagues¹⁵ noted that polyp detection rate rises with increasing age of the persons who undergo lower endoscopy.

In our study, among the patients diagnosed having colorectal polyps during sigmoidoscopic examination, 73.2% were male while 28.8% were female. We compared different characters / parameters of the polyps of the male gender with the female gender. We found males having polyps were younger than female, however; association was insignificant (36.78 ± 18.99 vs 39.59 ± 16.39 years, $p=0.541$). In a study published in BMC Gastroenterology 2016¹⁶, sessile serrated polyps were found prevalent among females as compared to males (5.1% vs 4%, $P=0.02$). In our data, we also compared gender of the patients (male/female) with the categories (pedunculated/ sessile) polyps. The statistical association between two groups was insignificant ($p=0.429$). Heather S. Laird-Fick et al¹⁶ also found that solitary polyps were significantly common in male sex than females (57.7% vs 42.3%, $p<0.01$). Our findings were also consistent with this study conclusions. In our study, male gender had significantly more solitary polyps ($p=0.035$). In binary logistic regression analysis, the positive association of solitary polyp with male gender was also predicted ($p=0.026$, $OR=4.330$, $CI=1.193-15.711$). There are multiple studies available in literature that compared the gender with the different characteristics of the colorectal polyps. In 2017, Lei Zhou et al¹⁷ found no statistical link between histology of colorectal polyps and the gender of the patients ($p>0.05$). Bashir J. Qumseya, Susan Coe, and Michael B. Wallace¹⁸ noted that female gender was associated with lower risk of finding dysplasia in colorectal polyps ($p=0.03$). Courtney B. Sherman and colleagues¹⁹ compared the location of the polyps (right/left) with the gender of the patients (male/female). They found insignificant association between the location of polyp and gender ($p=0.570$) while Mahsa Ahadi²⁰ concluded that colorectal polyps are more located in the rectum in the males as compared to females. Similarly, in our study, 41(50%) polyps were located in rectum. We also proved our findings with bivariate analysis and binary logistic regression that male gender predicts the location of the polyps significantly more in rectum. Independent samples T-test also showed that mean distance of the polyp from anal verge was significantly short in male gender as compared to female gender (16.88 ± 8.35 vs 22.09 ± 2.75 cm, $p=0.034$). We also compared the presentation complaints with the gender of the patients and found insignificant association. Our study has a lot of information, however; studies with larger sample size are advised to validate the findings.

CONCLUSION

Colorectal polyps are found in both male and female gender during sigmoidoscopic examination. These are solitary and frequently inside the rectum among the males as compared to the female gender. Gender has no association with age,

presentation complaints, and presence of the stalk of the polyp among the studied Pakistani population.

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