

Retrospective Analysis of Extent of Ulcerative Colitis, Predictive Factors and Coexisting Disorders on Sigmoidoscopy

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ABSTRACT

Aim: To determine the characteristics of ulcerative colitis including extent of the disease, predictive factors and coexisting disorders in patients who underwent sigmoidoscopy at Liver Clinic, Lahore,

Study Design: Retrospective cohort study.

Methods: In a retrospective analysis of the patients who were diagnosed as suffering ulcerative colitis during sigmoidoscopy, the genders, age groups, indication for sigmoidoscopy, and type of ulcerative colitis were the qualitative variables, while age of the patients was the only quantitative variable.

Results: The ulcerative colitis was the diagnosis in 117(11.65%) patients during a total of the 1004 sigmoidoscopies. The mean age of these ulcerative colitis patients was 37.85+14.26. 68(58.1%). 68(58.1%) were male while 49(41.9%) were female. 23(19.6%) patients were suffering ulcerative proctitis, 25(21.4%) ulcerative proctosigmoiditis and in remaining 69 (59%) patients ulcerative colitis was seen throughout visualized length i.e. rectum till splenic flexure. 30(25.6%) patients with ulcerative colitis had additional associated disorders: 12(40%) ulcerative colitis patients had superimposed pseudomembranous colitis, 8(26.7%) colitis patients had pseudopolyps formation, 7(23.3%) had solitary benign polyps, 2(6.7%) had internal hemorrhoids and 1 (3.3%) patient had malignant growth

Conclusion: Ulcerative colitis was predominantly found in early age group and female gender presenting with bloody diarrhea during sigmoidoscopic examination.

Keywords: Ulcerative colitis, Sigmoidoscopy, Retrospective analysis, Bivariate analysis, Odds ratio,

INTRODUCTION

Ulcerative colitis is an idiopathic chronic mucosal inflammation of the colon and rectum¹. It is a lifelong disease with relapsing and remitting course. The patients usually present with bloody diarrhea². According to Montreal classification³, the endoscopic extent of the disease is categorized into proctitis, left sided colitis and extensive colitis. The clinical severity of the disease is determined by Truelove and Witts criteria; ⁴ according to which >6 bloody stools per day with anemia, fever, tachycardia and ESR >30 defines severe ulcerative colitis. The prevalence of ulcerative colitis in Asia ranges from 5.3 to 63.6 per 100000 people^{5,6}. The disease is less common in children with most cases diagnosed at age 30-40 years⁷. The distribution of the disease between gender varies in different countries^{8,9}. The extent of ulcerative colitis determines the clinical course and prognosis of the disease. Therefore, extensive colitis likely requires more intensive therapies or even colectomy^{10,11}. Similarly, it is at more higher risk for development of CRC; whereas proctitis has no such risk¹².

The objective of this study was to determine the characteristics of ulcerative colitis including extent of the disease, predictive factors and coexisting disorders in patients who underwent sigmoidoscopy at Liver Clinic, Lahore, Pakistan.

MATERIAL AND METHODS

This was a retrospective cohort study carried out at Liver clinic, 250 Shadman Lahore. All the patients who were diagnosed as suffering ulcerative colitis during sigmoidoscopy from February 2010 to July 2017 were included. The ages of the patients were categorized into 4 groups: child if age < 19 years, young adults if 19-35 years, middle age adults if 36-55 years and older adults if age > 55 years¹³.

The sigmoidoscopic extent of the ulcerative colitis was categorized as follow. The disease limited to rectum was named as ulcerative proctitis, while disease involving only rectum and sigmoid colon was named as ulcerative proctosigmoiditis. The involvement throughout visualization till splenic flexure was a third group, which was further advised complete colonoscopy to differentiate left-sided colitis from extensive colitis. All the additional findings like superimposed pseudomembranous colitis, malignant growth etc were noted. The indications for sigmoidoscopy were categorized into 2 groups: one

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with bloody diarrhea and other without bloody diarrhea.

The genders, age groups, indication for sigmoidoscopy, and type of ulcerative colitis were the qualitative variables, while age of the patients was the only quantitative variable. The precious data was analyzed on SPSS version 15. During descriptive interpretation of data, means and standard deviations were calculated for the presentation of quantitative variables, and frequencies and percentages were computed for qualitative variables. The bivariate analysis was performed in order to determine the significant relation of different predictive factors with presence of ulcerative colitis. While applying chi-square test of independence, p value of equal to or less than 0.05 was considered as significant. Moreover, odds ratio along with their 95% confidence interval (CI) were also calculated for each association.

RESULTS

Out of total of 1004 patients who underwent sigmoidoscopy, 117(11.65%) were diagnosed as suffering ulcerative colitis. 68 (58.1%) were male while 49 (41.9%) were female. The mean age of these ulcerative colitis patients was 37.85+14.26 with a range from 14-80 years. Out of 117 patients, 23(19.6%) patients were suffering ulcerative proctitis, 25(21.4%) ulcerative proctosigmoiditis and in remaining 69(59%) patients ulcerative colitis was seen throughout visualized length i.e., rectum till splenic flexure (Table 1). This last group included 2 categories i.e., left sided colitis as well as extensive colitis. For differentiation, these patients were advised complete colonoscopic examination.

30(25.6%) patients with ulcerative colitis had additional associated disorders. 12(40%) ulcerative colitis patients had superimposed pseudomembranous colitis, 8(26.7%) colitis patients had pseudopolyps formation, 7 (23.3%) had solitary benign polyps, 2(6.7%) had internal hemorrhoids and 1(3.3%) pt had malignant growth as well (Table 2).

The disease distribution in different age groups was decremental i.e., 17.9% children, 16.8% young adults, 10.9% middle aged adults and 4.6% older adults were suffering ulcerative colitis. This presence of ulcerative colitis in different 4 age groups in a decremental fashion was statistically significant (p=0.000). 16.5% (49 out of 297) females had ulcerative colitis while only 9.6% (68 out of 707) males had ulcerative colitis. This more prevalence of ulcerative colitis in female gender in our population was statistically significant (p=0.003). Similarly, amongst patients with bloody diarrhea, 21.9% (101 out of 462) were diagnosed having ulcerative colitis. In contrast, only 3% (16 out of 542) patients with complaints other than bloody diarrhea were diagnosed having ulcerative colitis. The association of bloody diarrhea as indication of sigmoidoscopy with diagnosis of ulcerative colitis was also statistically significant (p=0.000). Hence, earlier age, female gender with bloody diarrhea as indication for sigmoidoscopy predicts the likely diagnosis of ulcerative colitis.

Table 1: Distribution of ulcerative colitis on sigmoidoscopic examination (n = 117/1004).

	Frequency
Ulcerative proctitis	23 (19.6%)
Ulcerative proctosigmoiditis	25 (21.4%)
Ulcerative colitis, involving rectum till splenic flexure	69 (59%)

Table 2:A associated disorders with Ulcerative colitis

Associated disorders with ulcerative colitis	Frequency
Ulcerative colitis with superimposed Pseudomembranous colitis	12 (40%)
Ulcerative colitis with Pseudopolyps formation	8 (26.7%)
Ulcerative colitis with Solitary benign polyps	7 (23.3%)
Ulcerative colitis with Internal hemorrhoids	2 (6.7%)
Ulcerative colitis with malignant growth	1 (3.3%)

Table 3: Correlation of diagnosis being Ulcerative colitis with different parameters (n = 117/1004).

Parameters /Categories	Ulcerative colitis		Total	p-value	Odd ratio with 95% Confidence interval
	Yes	No			
Male	68 (9.6%)	639 (90.4%)	707	0.003	0.539 (0.363-0.800)
Female	49 (16.5%)	248 (83.5%)	297		
Age groups:				0.000	*
Children	7 (17.9%)	32 (82.1%)	39		
Young adults	49 (16.8%)	243 (83.2%)	292		
Middle aged adults	52 (10.9%)	425 (89.1%)	477		
Older adults	9 (4.6%)	187 (95.4%)	196		
Indication of sigmoidoscopy:				0.000	0.109 (0.063-0.187)
Bloody diarrhea	101 (21.9%)	361 (78.1%)	462		
Others	16 (3.0%)	526 (97.0%)	542		

* Odd ratio can only be computed for 2 X 2 tables

DISCUSSION

Ulcerative colitis has been reported worldwide¹⁴. The frequency of ulcerative colitis patients amongst candidates who underwent sigmoidoscopy was only 2% in Ireland.¹⁵ Our data suggests 11.65% (117 out of 1004) patients suffering ulcerative colitis. International data suggests that the age at time of diagnosis is 30-40 years in majority patients and disease is less common in children.⁷ The recent data is pointing towards rising incidence of paediatric IBD.¹⁶⁻¹⁷ Our study showed the disease distribution in different age groups in decremental pattern with more prevalence in children and least in older adults. This is a point to be worried because higher frequency of ulcerative colitis patients at endoscopy suite (2% vs 11.65%) and more prevalence at child age group favors high disease burden in our population.

One large Asian study on extent of ulcerative colitis¹⁸ claims the commonest sub-type is proctitis (proctitis: 37%; distal colitis: 32%; extensive colitis: 31%). However in our study, it was seen in reverse i.e. (proctitis: 23%; proctosigmoiditis: 25%; Involvement till visualizing splenic flexure: 69%). This finding points towards more extensive involvement by disease in our population. Further studies are required to evaluate this hypothesis.

A large American study of 35404 cases of ulcerative colitis reported female predominance,⁹ while previously in Asia male predominance was observed.⁸ However, our study showed significant proportion of females (p=0.000) involved with ulcerative colitis.

In a second study on ulcerative colitis from Pakistan,¹⁹ the predominant presenting symptom was mucous diarrhea in 90.7% patients (n=49), while in our study, the chief presentation of ulcerative colitis patient was bloody diarrhea (40.7%; n=361).

The prevalence of pseudomembranous colitis in our study (10.3%) was more than double in comparison to available US data (3.7%)²⁰. This demands the better hygienic conditions and avoidance of undue antibiotics in our ulcerative colitis patients.

CONCLUSION

Ulcerative colitis is a common finding during sigmoidoscopy, being more prevalent in females in our population. Its distribution in different age groups was decremental. Earlier age, female gender and bloody diarrhea were significantly associated with occurrence of ulcerative colitis. Multiple associated disorders like superimposed pseudomembranous colitis, pseudopolyps and malignant growth etc were also observed in ulcerative colitis patients.

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