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RESEARCH ARTICLE

INFLAMMATORY BOWEL DISEASE IN KASHMIR VALLEY

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ABSTRACT

Background: Last decade has shown increase in IBD cases from Asian countries which is against the belief that IBD is very rare in developing Asian countries including Kashmir valley. There is no study done in Kashmir valley on Inflammatory Bowel Disease.

Objective: To study Clinicopathological profile of IBD patients in Kashmiri population where this disease has not been studied till now.

Material and Methods: 5 years study extending from June 2009 to June 2014, prospective for two years and retrospective for three years. Biopsies and resected specimen received were studied in detail.

Results: Study included total of 210 IBD cases. Males were 127 (60.5%) and 83 (39.5%) were females. M:F ratio was 1.53:1. Age ranged from 1 to 80 years, Mean Age was 39.75 years. Maximum number of cases were seen in age group of 20 to 30 years (23.33%). Smoking history was absent in 79%. History of junkfood and fast food consumption was present in most IBD patients. 75.5% were residing in urban areas. IBD was more common in Educated and Middle socioeconomic class. Pain abdomen, bloody diarrhoea and Hematochesia were dominant symptoms. Arthritis was present in 4 patients. Mean duration of disease was 2.43 years. Haemorrhagic areas, ulcerated and friable areas, loss of vascularity and oedema were dominant endoscopic findings. Rectum was involved in 119 and sigmoid colon in 84 patients. Cryptitis, mucodepletion, cryptabscesses, crypt distortion, cryptatrophy and epithelial erosions were dominant microscopic findings. Out of total 210 IBD patients UC was present in 86.6%, CD in 12.38% and Indeterminate colitis in 2 patients. Granulomas and fissures were present in 9 CD Patients. All CD and Indeterminate colitis patients were negative for Dysplasia, out of 182 UC patients low grade dysplasia was present in 17 and high grade dysplasia in 4 patients.

Conclusion: IBD is no longer a western disease only. This study confirms the existence of IBD in this geographical area and emphasises the need of studying IBD in detail in this geographical area and increasing awareness about this disease by educating health care providers and patients about this disease and encourage periodic endoscopic surveillance biopsies to rule out dysplasia.

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INTRODUCTION

Inflammatory Bowel Disease (IBD) is a chronic relapsing and remitting inflammatory condition of the gastrointestinal tract that manifests as one of two usually distinct but sometimes overlapping clinical entities, ulcerative colitis (UC) and Crohn's disease (CD) (Friedman, 2000). Ulcerative colitis affects the colon and is a superficial ulcerative disease, whereas CD is

a transmural granulomatous disorder that affects any part of the gastrointestinal tract and has a predilection for the terminal ileum and colon (Friedman, ?; Andres, 1999). Both forms of IBD are associated with prominent extra-intestinal manifestations and an increased incidence of gastrointestinal cancer; in addition, both begin relatively early in life and persist for long periods, leading to decreased quality of life indices and a greater than two fold increase in mortality rate (Friedman, 2000; Andres, 1999; <http://www.cafa.org> and Loftus, 2003). The incidence of inflammatory bowel disease varies according to geographic location. Higher rates are typically found in the more developed countries of

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Scandinavia, northern Europe, and North America, with lower rates in Asia, Africa, and South America (Sandler, 2004). However the incidence is increasing in the less-developed countries as they become more industrialized, implicating environment, diet, and cultural practices as potential risk factors (Sandler, 2004; Salem, 1967; Gilat, 1976; Kusakcioglu, 1979; Mir-Madjlessi, 1985; Hossain, 1980; Al-Nakib, 1984; Garland, 1984 and Gyde, 1982). Until recently it was believed that IBD was rarely seen in underdeveloped nations including Asian countries but last two decades have seen an increase in the reports of both ulcerative colitis (UC) and Crohn's disease (CD) from Asian countries (Mir-Madjlessi, 1985; Hossain, 1989; Al-Nakib, 1984 and Garland, 1984). There are more than 1 million people with IBD in the United States with new cases diagnosed at a rate of 10 cases per 100,000 people. These diseases account for 700,000 physician visits per year and 100,000 hospitalizations per year in the United States (Gyde, 1982). Patients with long-standing ulcerative colitis (UC) and Crohn's disease of the colon are at an increased risk of developing colorectal neoplasia (dysplasia and colorectal carcinoma (Shapiro, 1997 and Feagins, 2009). In inflammatory bowel disease (IBD) the development of colorectal carcinoma (CRC) occurs through an inflammation-dysplasia-carcinoma pathway.¹⁵ In contrast to patients with sporadic CRC, individuals with IBD-related CRC have an increased incidence of synchronous malignancies, an absence of adenomatous polyps preceding the development of carcinoma, and a more rapid rate of progression of colonic mucosa to dysplasia (Shapiro, 1997 and Feagins, 2009).

Objective

To study Clinicopathological profile of IBD patients in Kashmiri population where this disease has not been studied till now.

MATERIAL AND METHODS

The present study was hospital based study and was done in the Department of Pathology, Sher-i-Kashmir Institute of Medical Science (SKIMS), Srinagar Kashmir to analyse the Clinical and Histopathological profile of Inflammatory bowel disease patients and association of ulcerative colitis with dysplasia in a tertiary care hospital.

Period of study

This was a five year study extending from June 2009 to June 2014. The study was prospective for two years starting from June 2012 to June 2014 and retrospective for three years from June 2009 to May 2012. The study included biopsies and resected specimen received from department of Medical Gastroenterology and Surgical Gastroenterology of SKIMS over the period already mentioned. Detailed clinical information was gathered from hospital records and patient follow up. In retrospective study the case record of all the diagnosed cases in the past three years were reviewed from the Medical record section of hospital and filing section of Pathology Department, all slides and blocks of diagnosed cases were studied in detail, patients were called for follow up endoscopies. Patients who did not come for follow up were excluded from the study.

RESULTS

During the five years study period 210 patients satisfied diagnostic criteria for IBD.

Clinical Profile

Males were 127 (60.5%) cases of inflammatory bowel disease and females were 83 cases (39.5%). Male: Female ratio was 1.53:1. In this study age ranged from 1 to 80 years. Mean age was 39.75 years. Maximum number of cases were seen in the age group 20-30 years (49 cases, 23.33%), followed by 40-50 years (43 cases, 20.47%) and 30-40 years age group (42 cases, 20%). Only in (2 cases 0.95%) age was less than ten years. Smoking history was absent in 166 (79%) and present in 44 (21%) patients. Maximum number of patients were taking mixed vegetarian and non-vegetarian diet although history of junk food and fast food consumption was present in most of IBD patients. Married patients were 134 (63.8%) and 159 (75.7%) patients were residing in urban areas. IBD was more common in educated class, mostly students and employed people were involved and most of patients were from middle socioeconomic class. Family history and history of appendectomy was absent in all patients. Pain abdomen, Bloody diarrhoea, Diarrhoea, and Hematochesia were dominant symptoms. Extra intestinal manifestations in the form of arthritis was present in only four patients (1.90%). Mean duration of disease was 2.43 years. Duration of disease was less than 1 year in 78.57% patients, 1 to 10 years in 14.76% patients and greater than 10 years in 5.71% patients. Haemorrhagic spots, ulcerated, erythematous and friable areas, loss of vascularity and oedema were dominant endoscopic findings. Colonic involvement was seen in most patients. Rectum was involved in 119 (56.66%) patients and Sigmoid colon in 84 (40%) patients.

Histopathological Profile

Cryptitis, mucodepletion, crypt abscesses, crypt distortion, crypt atrophy and epithelial erosions were dominant microscopic findings. Inflammatory infiltrate was mixed in most patients with predominance of neutrophils. Transmural inflammation was present in Crohn's disease patients while in ulcerative colitis patients inflammation was superficial. Ulcerative colitis was present in 182 patients (86.6%), Crohn disease in 26 patients (12.38%) and Indeterminate colitis in 2 patients (0.95%). Granulomas and Fissures were present in nine (34.61%) patients of Crohn's disease.

Dysplasia Associated With Ulcerative Colitis Patients

All Crohn's disease and indeterminate colitis patients were negative for dysplasia. Out of 182 ulcerative colitis patients low grade dysplasia was present in 17 (9.34%) patients and high grade dysplasia was present in 4 (2.19%) patients.

DISCUSSION

This hospital based study thus confirms the existence of both Ulcerative colitis and Crohn's disease in this geographical area, there is progressive increase in IBD cases every year. It appears that the current frequent encounter of IBD cases parallels the exponential growth in development and industrialization, a tendency to more western dietary habits and exposure to more psychological stress associated with such a life. This study included total of 210 cases. Males were 127/210 (60.5%) cases of Inflammatory bowel disease and females were 83/210 cases (39.5%). Male: Female ratio was 1.53:1. This pattern is similar to most studies from Asian countries (Table 1) (Leidenius, 1991; Satti, 1996 and Shirazi,

2013) but is unlike western experience (Garland, 1984 and Gyde, 1982). This difference may relate to the custom that males are likely to seek medical advice more commonly than females in relation to colorectal disease.

Table 1. Comparison of Male: Female ratio in different studies

Authors	Total	Males	Females	Male: Female ratio
Leideni's et al. ¹⁶	66	38	28	1.35:1
Mohammad et al. ¹⁷	76	49	27	1.8:1
Shirazi et al. ¹⁸	200	106	94	1.12:1
Raja Shekhar et al. ³¹	42	17	25	0.68:1
Present Study	210	127	83	1.53:1

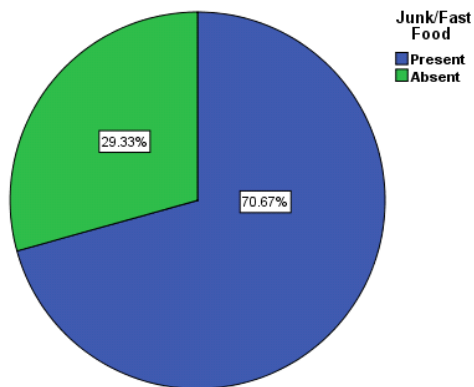


Chart 1. Distribution of cases according to history of junk foods and fast foods consumption

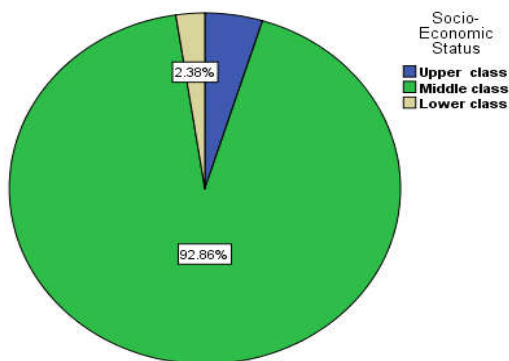
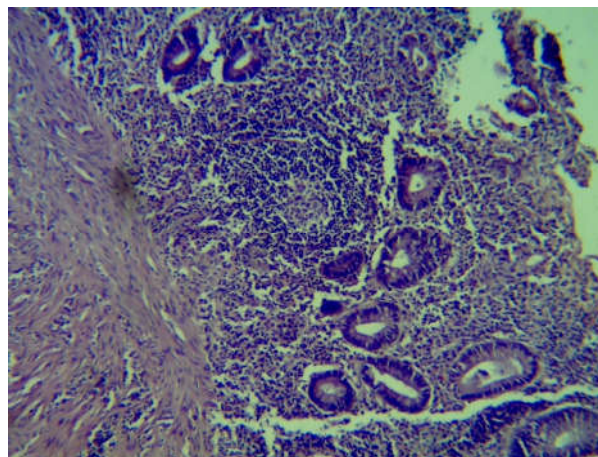
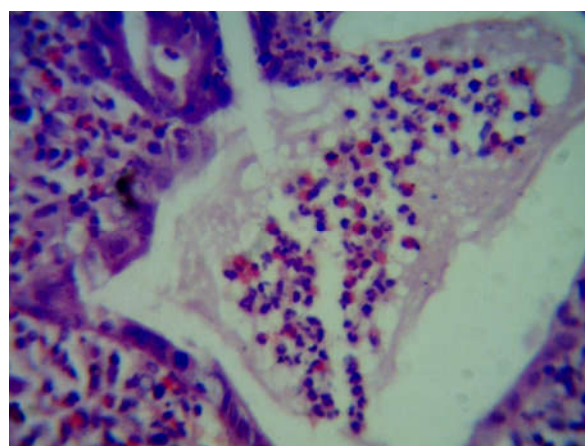


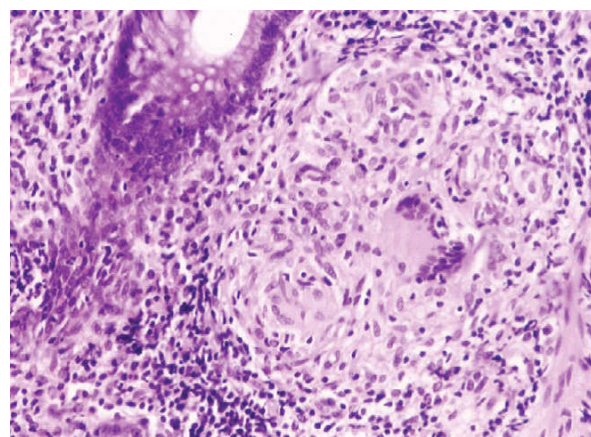
Chart 2. Distribution of cases according to Socioeconomic status



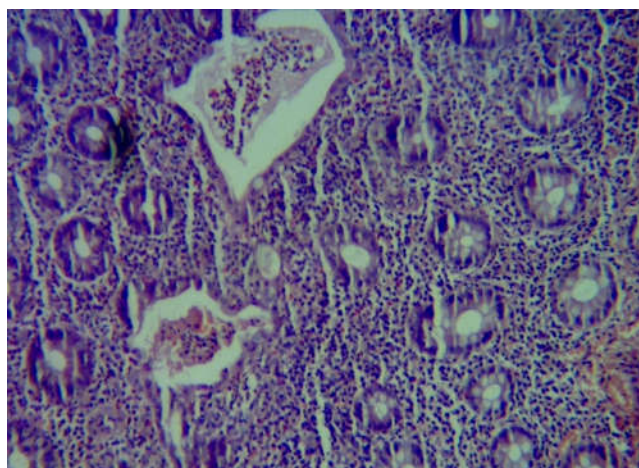
Microphotograph of a case of Crohn's disease showing decreased crypt density, crypt atrophy, lymphoid follicle formation and irregular hypertrophy of the muscularis mucosae. H&E stain (10X)



Microphotograph of a case of ulcerative colitis showing crypt abscesses. Numerous neutrophils and eosinophils are present within the crypt. H&E stain (40X)



Microphotograph of case of Crohn's disease showing noncaseating granulomas in the submucosa H&E stain (40X)



Microphotograph of a case of ulcerative colitis showing crypt abscesses, crypt atrophy and dense mixed inflammatory infiltrate in the lamina propria. H&E stain (10X)

In this study age ranged from 1 to 80 years The youngest patient was less than one year old and eldest patient was 80 year old. Mean age is 39.75 years and Standard deviation of 16.04. Maximum number of cases 49 (23.33%) were seen in the age group 20-30 years, followed by 43 (20.47%) cases in 40-50 years age group years, 42 (20%) cases were in the age group of 30-40 years, 30 (14.28%) cases were in 50-60 age group, 23cases (10.95%) cases were in 10-20 years age group 19 (9.04%) cases were in 60-70 years age group, 2 (0.95%)

cases were in 70-80 years age group and 2 (0.95%) cases were belonged to less than 10 years age group. This is almost similar to studies by Das et al. (Das, 2009), Ghoshal et al. (Ghoshal, 2007) and Pai et al. (Pai, 2000). History of smoking was present in 44/210 (21%) patients and was absent in 166 patients (79%). This pattern was similar to study by Shiraziet al. (Shirazi, 2013), 159/210 patients (75.7%) were residing in urban areas and 51/200 patients (24.3%) were residing in rural areas. This was in accordance with study by Shiraziet al. (Shirazi, 2013) 5 (2.4%) patients belonged to lower class, 195/210 (92.9%) patients belonged to middle class and 10 (4.8%) patients belonged to upper class. This pattern was similar to study by Shiraziet al. (Shirazi, 2013), but unlike western studies were IBD is more common in high socioeconomic group. Pain abdomen, Diarrhoea, hematochesia, weight loss were most common symptoms similar to studies by Das et al. (Das, 2009), Pai et al. (Pai, 2000) and Gupta et al. (Gupta, 1962).

Only four patients (1.90%) showed extra intestinal manifestations in the form of Arthritis. Crypt atrophy was present in 55.23% of patients of IBD. Crypt distortion was present in 71.42% of patients of IBD. Cryptitis was present in 97.61% of patients, crypt abscess was present in 73.33% of patients, mucodepletion was present 80% of patients, epithelial erosions was present 44.28% of patients, granulomas were present 34.61% of patients in Crohn's disease. These results were almost similar to studies by Surawicz CM et al. (Surawicz, 1984), Allison MC et al. (Allison, 1987), Seldenrijk CA et al. (Seldenrijk, 1991), Lessells AM et al. (Lessells, 1994), Theodossi A et al. (Theodossi, 1994), and Cook MG et al (Cook, 1973).

In 91.91% of patients site of disease was colon. Rectum and Sigmoid colon were the most common sites involved. In about 7.61% of patients site of disease was ileocaecal. These results were slightly different from studies by Das et al (Das, 2009), Pai et al (Pai, 2009), and Benjamin et al²⁹ but were similar to studies by Mohammad Al Fadda et al (Mohammed Al FaddaMusthafachalikandyPeedikayil, 2012) and Mohammad B. Satti et al (Satti, 1996). This may be due to less number of Crohn's disease cases in our study. Mean duration of disease was 2.43 years. Duration was less than 1 year in 78.57% patients, 1 to 10years in 14.76% patients, greater than 10 years in 5.71% patients. 189 patients (90%) were negative for dysplasia, low grade dysplasia was present in 17 (8.1%) patients and high grade dysplasia was present in 4 patients (1.9%). Ulcerative colitis was present in 182 patients (86.6%), Crohn's disease in 26 (12.3%) patients and indeterminate colitis in 2 (0.95%). Results were similar to study by from middle east Mohammad Al Fadda et al³⁰ and Mohammad B. Satti et al but different from study by Sawczenko A et al²⁶ from UK and studies from America (Garland, 1984 and Gyde, 1982)

Conclusion

This study thus confirms the existence of IBD in this geographical area and emphasises the need of studying IBD in detail in this geographical area as IBD has no longer remained a western disease only and increasing awareness about this disease by educating health care providers and patients about this disease. periodic endoscopic surveillance biopsies should be encouraged in order to prevent long term complications.

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