



OCULAR MANIFESTATIONS OF INFLAMMATORY BOWEL DISEASE

Dr Pampa Halder	Associate Professor, Department of Ophthalmology, R G Kar Medical College, Kolkata, India
Dr Vishwanath Pratap	Junior Resident, Department of Ophthalmology, R G Kar Medical College, Kolkata, India
Dr Madhavi	Senior Resident, Department of Ophthalmology, R G Kar Medical College, Kolkata, India,
Dr Soumi Kanji	Junior Resident, Department of Ophthalmology, R G Kar Medical College, Kolkata, India
Dr Biswadip Ghosh*	Associate Professor, Department of Clinical Immunology and Rheumatology, IPGME&R, Kolkata, India *Corresponding Author
Prof. Manas Bandyopadhyay	Professor and Head, Department of Ophthalmology, R G Kar Medical College, Kolkata, India,

ABSTRACT **Background:** Extraintestinal manifestations (EIM) are often observed in patients with Inflammatory bowel disease (IBD). Approximately 10%–13% of IBD patients present with ocular manifestations which can be potentially sight threatening. They occur more frequently in patients with Crohn's disease (CD) than Ulcerative Colitis (UC). They can occasionally manifest before the usual intestinal manifestations. It is important to understand the clinical presentation of possible ocular manifestations in order to initiate appropriate treatment and to help prevent significant visual morbidity. **Aims and objectives:** Aim of this study is to determine the prevalence and types of ocular manifestations in IBD. **Materials and methods:** Patients attending the Gastroenterology outpatient department at R. G. Kar Medical college, Kolkata having diagnosed with IBD were selected for the study. They underwent complete ophthalmological examination. This study is a prospective observational study. Total of 160 patients were examined and findings noted. **Results:** The prevalence of ocular manifestations in our study was found to be 13.75%. The mean age was 32.5 years (23-63 years). There were 52 females (32.5%) and 108 males (67.5%). The mean duration of IBD was 5.4 years. Various ocular manifestations found in our study were 12 episcleritis (7.5%), 8 anterior uveitis (5%) and 2 scleritis (1.25%). **Conclusion:** Patients with IBD can have sight threatening ocular complications. They should be educated about the symptoms of ocular complications and advised to seek ophthalmic care promptly.

KEYWORDS : Inflammatory bowel disease; Episcleritis; Uveitis; Scleritis

INTRODUCTION

Inflammatory Bowel Disease (IBD), mainly represented by Ulcerative colitis (UC) and Crohn's disease (CD) is a group of chronic diseases of unknown etiology. Immune-mediated mechanisms are involved in the etiopathogenesis of these disorders in genetically susceptible individuals. Among these mechanisms are dysregulation of innate and adaptive immune responses directed against luminal bacteria or their products and changes in the intrinsic barrier function of the intestinal mucosa. However, despite recent advances in understanding the molecular mechanisms involved in the pathogenesis, the exact cause(s) of IBD remains elusive.^[1-4]

Extraintestinal manifestations (EIM) of IBD often involves various organs in the body and may develop before the onset of gastrointestinal symptoms itself.^[5-8] The EIM consists of involvement of joints (peripheral and axial arthropathy), skin (erythema nodosum, pyoderma gangrenosum, aphthous stomatitis), eyes (episcleritis, uveitis) and hepatobiliary tract.

Usually the ocular manifestations are of inflammatory origin, and is more common in patients with colitis or ileocolitis than in patients with isolated small-bowel disease, this difference in incidence is explained by an immune complex hypersensitivity reaction to a colonic antigen.^[6,8] However, some of these manifestations may reflect the overall activity of the underlying inflammatory bowel disease. These include conjunctivitis, episcleritis, scleritis, marginal keratitis, anterior uveitis, retinitis, retinal vascular occlusive disease, optic neuritis, and orbital inflammatory disease.^[12]

Various studies have shown that severely affected IBD patients have demonstrated ocular manifestations with serious vision threatening complications. This study was conducted with the aim of determining the prevalence and types of ocular manifestations in patients with IBD, attending the outpatient department. The objective of the study is to determine the prevalence of different types of ocular manifestations in

patients with IBD.

MATERIALS AND METHODS

This is a prospective observational study performed over a period of about 1 year from April 2020 to March 2021. One hundred and sixty patients diagnosed with IBD in the Gastroenterology outpatient department of R. G. Kar Medical College, Kolkata, India were included in the study. An informed consent was taken from all the patients. Ethical clearance was obtained from the institute Ethics committee.

Exclusion Criteria:

Patients with cataract (which precludes the view of the retina). Patient with any ocular or systemic disease with posterior fundus lesions which can have a confounding effect on retinal changes were also excluded from the study.

Procedure:

A thorough history was taken. All the patients underwent slit lamp examination of the anterior segment and findings were noted. The visual acuity was checked using Snellen's chart. Following which the pupils were dilated using Tropicamide 0.8% + Phenylephrine Hydrochloride 5% eye drops. The Fundus was then examined using direct ophthalmoscope, slit lamp bio microscopy with 90 Diopter lens and indirect ophthalmoscope with 20 Diopter lens and findings were noted.

RESULTS AND ANALYSIS

Between April 2020 to March 2021, a total of 160 patients with IBD were examined for ocular manifestations. The prevalence and types of ocular manifestations were analysed.

Table 1 shows the distribution of IBD was highest in the age group 21-30 years (72 patients, 45%), followed by 31-40 years (48 patients, 30%).

Table 1: Age incidence

Age group (years)	Number of patients	Percentage
8 to 20	0	0%
21 to 30	72	45%
31 to 40	48	30%
41 to 50	24	15%
>50	16	10%

Table 2 shows the distribution of IBD to be more in males (108 patients, 67.5%) than in females (52 patients, 32.5%).

Table 2: Sex incidence

Sex	Total	Percentage
Male	108	67.5%
Female	52	32.5%

Table 3 shows distribution of IBD in our study. Total of 96 patients (60%) had UC and 64 patients (40%) had Crohn's disease.

Table 3: Inflammatory Bowel Disease Status

IBD type	Number of patients	Percentage
Ulcerative colitis	96	60 %
Crohn's Disease	64	40%

Prevalence of ocular manifestations was 9.375% (30 patients) for Crohn's disease and 4.375% (14 patients) for Ulcerative colitis.

Prevalence Of Types Of Retinal Changes In The Eyes Included In The Study:

The most common finding was episcleritis (7.5%). Other findings were anterior uveitis (5%) and scleritis (1.25%).

Table 4: Various types of ocular manifestations seen in our study.

Ocular manifestations	number of patients	Percentage
Episcleritis	12	7.5 %
Anterior Uveitis	8	5.0 %
Scleritis	2	1.25%

On data analysis of our study, it was found that the prevalence of ocular manifestations in patients with IBD was 13.75% and most common ocular manifestation was episcleritis.

DISCUSSION

Prevalence of ocular manifestations was found to be 13.75%. Mean age of patient was 32.5 years (23 -63). The number of females in our study were 52(32.5%) and males 108(67.5%). Mean duration of IBD was 5.4 years. 8 Anterior uveitis (5%), 12 episcleritis (7.5%), 2 scleritis (1.25%). No changes were observed in 86.25% of the patients. Similarly, Bandyopadhyay et al. reported in their study of 120 Indian IBD patients (62 patients with CD and 58 with UC) in 2015 showed that 16(13%) have ocular manifestations, 7 of them had uveitis and 9 episcleritis. The frequency of ocular EIM reported was similar to that among American and European populations.^[9]

Manser et al. detected uveitis in 15.7% of patients with extraintestinal complications and 12.3% of all 179 UC patients evaluated. They suggested that the introduction of early mesalazine therapy, up to 2 months after UC diagnosis, could be a protective factor against the development of EIMs.^[10]

A prospective cohort study conducted by Isene et al. in Europe (Norway, Denmark, Netherlands, Spain, Italy and Israel) in 2015 in 1145 (364 CD; 781 UC) showed that 12(1%) had ocular manifestations, out of which, 10(0.9%) had anterior uveitis and 2(0.2%) episcleritis.^[11]

Our study shows high prevalence of episcleritis 7.5%, anterior uveitis 5% and scleritis 1.25%. Thus, we can say that the prevalence of various ocular manifestations in our study is similar to other Indian studies. So, the results are corroborating with each other.

CONCLUSION

Since asymptomatic inflammation of ocular tissues may occur, a routine ophthalmic follow up is recommended in all IBD patients, at the onset of therapy and before changes in therapy because some drugs may cause ocular adverse effects. Patients with chronic use of systemic corticosteroids should be warned of the risk of cataracts and glaucoma.

Patient awareness of possible eye involvement is important in improving understanding of their disease and health outcomes, supporting early diagnosis, which will contribute to success of the treatment.

Ocular manifestations may be associated with serious vision threatening complications. IBD Patients should be educated about the symptoms of ocular complications and advised to seek ophthalmic care promptly.

REFERENCES

1. Abraham C, Cho JH. Inflammatory bowel disease. *N Engl J Med* 2009;361:2066-078.
2. Baumgart DC, Sandborn WJ. Inflammatory bowel disease: Clinical aspects and established and evolving therapies. *Lancet* 2007;369:1641-657.
3. Fiocchi C. Inflammatory bowel disease: etiology and pathogenesis. *Gastroenterology* 1998;115:182-05.
4. Podolsky DK. Inflammatory bowel disease. *N Engl J Med* 2002;347:417-29.
5. Ardizzone S, Puttini PS, Cassinotti A, et al. Extraintestinal manifestations of inflammatory bowel disease. *Dig Liver Dis* 2008;40:S253-S59.
6. Bernstein CN, Blanchard JF, Rawsthorne P, et al. The prevalence of extraintestinal diseases in inflammatory bowel disease: a population-based study. *Am J Gastroenterol* 2001;96:1116-122.
7. Su CG, Judge TA, Lichtenstein GR. Extraintestinal manifestations of inflammatory bowel disease. *Gastroenterol Clin North Am* 2002;31:307-27.
8. Vavricka SR, Brun L, Ballabeni P, et al. Frequency and risk factors for extraintestinal manifestations in the Swiss inflammatory bowel disease cohort. *Am J Gastroenterol* 2011;106:110-19.
9. Bandyopadhyay D, Bandyopadhyay S, Ghosh P, De A, Bhattacharya A, Dhali GK, Das K. Extraintestinal manifestations in inflammatory bowel disease: Prevalence and predictors in Indian patients. *Indian J Gastroenterol* 2015;34:387-394.
10. Manser CN, Borovicka J, Seibold F, Vavricka SR, Lakatos PL, Fried M, Rogler G; investigators of the Swiss Inflammatory Bowel Disease Cohort Study. Risk factors for complications in patients with ulcerative colitis. *United European Gastroenterol J* 2016;4:281-287.
11. Isene R, Bernklev T, Høie O, Munkholm P, Tsianos E, Stockbrügger R, Odes S, Palm Ø, Småstuen M, Mowm B; EC-IBD Study Group. Extraintestinal manifestations in Crohn's disease and ulcerative colitis: results from a prospective, population based European inception cohort. *Scand J Gastroenterol* 2015;50:300-305.
12. J. F. Salmon, J. P. Wright, and A. D. N. Murray, "Ocular inflammation in Crohn's disease," *Ophthalmology* 1991;98:480-484.