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Original Research

Assessment of cases of inflammatory bowel disease among children

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ABSTRACT:

Background: Inflammatory Bowel disease (IBD) is a perplexing disease characterized by chronic mucosal inflammation. It results from a complex interplay of various factors including genetic and environmental, and adaptive immunity of the host. The present study was conducted to assess cases of inflammatory bowel disease (IBD) among children. **Materials & Methods:** 52 children diagnosed with inflammatory bowel disease of both genders were recruited. Etiology, clinical features and management of cases was recorded. **Results:** Common clinical features among crohn's disease (CD) and ulcerative colitis (UC) were abdominal pain in 15 and 20, diarrhoea in 20 and 12, fever in 11 and 9, weight loss in 6 and 4, perianal disease in 4 and 2 and hematochezia in 8 and 7 patients respectively. Erythema nodosum was present in 6, pyoderma gangrenosum in 2, arthritis in 1, osteoporosis in 5, uveitis in 2, anemia in 3 and autoimmune hepatitis in 1 case. The difference was significant (P< 0.05). **Conclusion:** Common clinical features were abdominal pain, diarrhoea, fever, weight loss, perianal disease and hematochezia.

Key words: Crohn's disease, Inflammatory Bowel disease, Ulcerative colitis.

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INTRODUCTION

Inflammatory Bowel disease (IBD) is a perplexing disease characterized by chronic mucosal inflammation. It results from a complex interplay of various factors including genetic and environmental, and adaptive immunity of the host.[1] Crohn's disease (CD) and Ulcerative colitis (UC) are the two broad phenotypes of IBD. CD is characterized by its ability to involve any part of the gastrointestinal tract in a discontinuous fashion. The inflammation associated with CD is often transmural and granulomatous. UC on the other hand tends to involve the rectum and the adjoining colonic mucosa to a variable extent; albeit in a continuous fashion. The inflammation in UC is usually superficial when compared with CD.[2]

In patients with IBD, host genetic, environmental, and microbial influences converge and result in a dysregulated mucosal immune response against the commensal intestinal microbiota. Recent technologic advances have led to an explosion of discovery of the genetic and microbial influences on IBD.[3] Genome-wide association studies have identified common variants in more than 150 genes that confer risk for IBD. Risk variants can be grouped into biological pathways that shed light on IBD pathogenesis, including innate and adaptive immunity and epithelial function. No difference exists in the common risk genes between pediatric-and adult-onset IBD; however, early-onset IBD may be associated with a higher burden of common risk variants and rarer variants with high penetrance.[4] The present study was conducted to assess cases of inflammatory bowel disease (IBD) among children.

MATERIALS & METHODS

The present study was conducted among 52 children diagnosed with inflammatory bowel disease of both genders. Parents were informed regarding the study and their written consent was obtained.

Data such as name, age, gender etc. was recorded. A thorough clinical examination was performed. Etiology, clinical features and management of cases was recorded. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 52		
Gender	**Boys**	**Girls**
Number	32	20

Table I shows that out of 52 children, boys were 32 and girls were 20.

Table II Assessment of clinical features

Clinical features	CD	UC	P value
Abdominal pain	15	20	0.02
Diarrhoea	20	12	
Fever	11	9	
Weight loss	6	4	
Perianal disease	4	2	
Hematochezia	8	7	
Total	28	24	

Table II, graph I shows that common clinical features among crohn's disease (CD) and ulcerative colitis (UC) were abdominal pain in 15 and 20, diarrhoea in 20 and 12, fever in 11 and 9, weight loss in 6 and 4, perianal disease in 4 and 2 and hematochezia in 8 and 7 patients respectively. The difference was significant (P< 0.05).

Graph I Assessment of clinical features

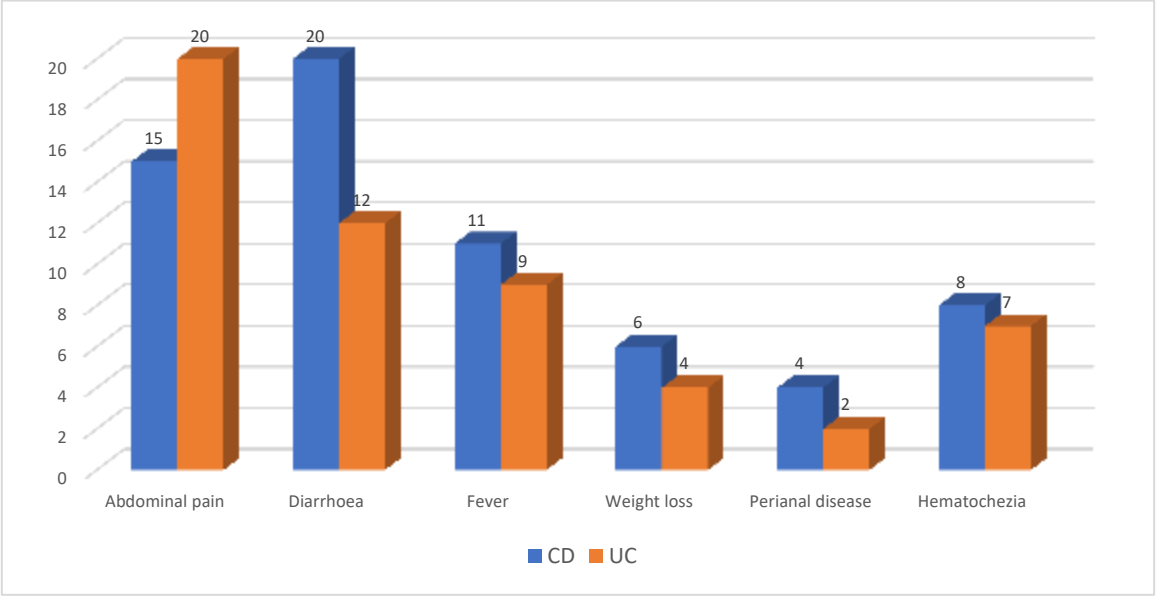
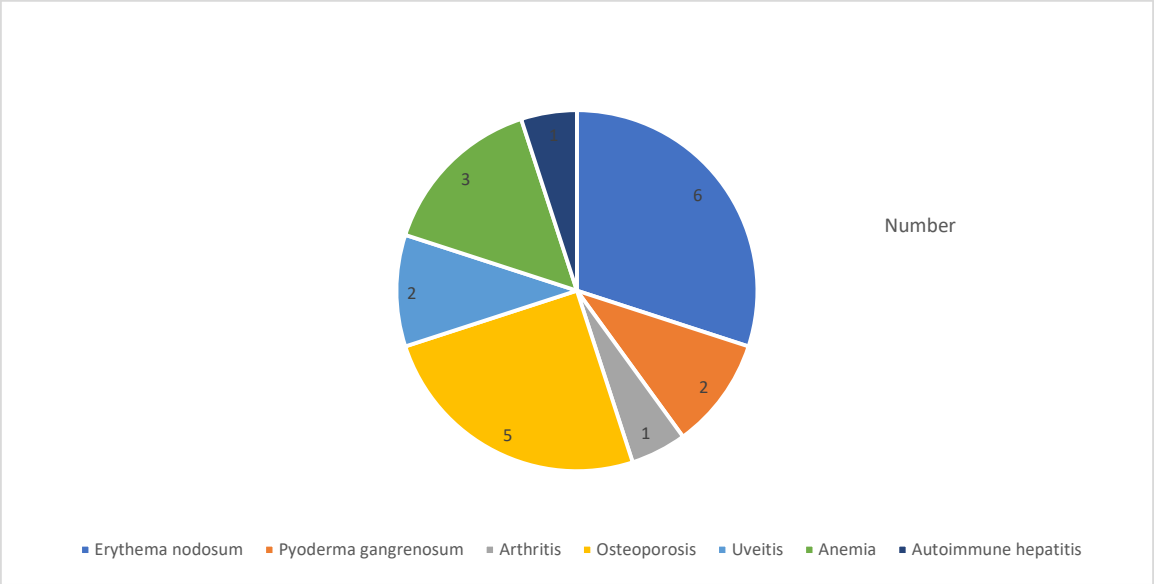


Table III Extraintestinal Manifestations of Inflammatory Bowel Disease

Extraintestinal Manifestations	Number	P value
Erythema nodosum	6	0.05
Pyoderma gangrenosum	2	
Arthritis	1	
Osteoporosis	5	
Uveitis	2	
Anemia	3	
Autoimmune hepatitis	1	

Table III, graph II shows that erythema nodosum was present in 6, pyoderma gangrenosum in 2, arthritis in 1, osteoporosis in 5, uveitis in 2, anemia in 3 and autoimmune hepatitis in 1 case. The difference was significant (P< 0.05).

Graph II Extraintestinal Manifestations of Inflammatory Bowel Disease



DISCUSSION

The inflammatory bowel diseases (IBDs), including ulcerative colitis and Crohn disease, are chronic inflammatory disorders of the gastrointestinal tract most often diagnosed in adolescence and young adulthood, with a rising incidence in pediatric populations. These disorders are common enough in children that most pediatricians and other pediatric clinicians will encounter children with IBD in their general practice. Inflammatory bowel disease is caused by a dysregulated mucosal immune response to the intestinal microflora in genetically predisposed hosts. Although children can present with the classic symptoms of weight loss, abdominal pain, and bloody diarrhea, many present with nonclassic symptoms of isolated poor growth, anemia, or other extraintestinal manifestations.[5] The present study was conducted to assess cases of inflammatory bowel disease (IBD) among children.

In present study, out of 52 children, boys were 32 and girls were 20. Three important observations underscore the importance of the environment on the development of IBD. First, the concordance rate for CD in monozygotic twins is only 50% and even less for UC.[6] Second, the rising incidence of IBD during the past 60 years is too fast to be explained by changes in our genetic makeup. Third, IBD is less common in developing countries, but, as countries become more developed, the incidence of IBD also rises. Furthermore, children of those who immigrate from developing countries to Western countries exhibit an incidence of IBD similar to that of Western populations.[7] Therefore, early-life environmental factors associated with a Western lifestyle may predispose to IBD. In fact, cesarean delivery, lack of exposure to breast milk, dietary fat intake, and early exposure to antibiotics have all been implicated as risk factors for IBD.

We found that common clinical features among crohn's disease (CD) and ulcerative colitis (UC) were abdominal pain in 15 and 20, diarrhoea in 20 and 12, fever in 11 and 9, weight loss in 6 and 4, perianal disease in 4 and 2 and hematochezia in 8 and 7 patients respectively. The extraintestinal manifestations were erythema nodosum was present in 6, pyoderma gangrenosum in 2, arthritis in 1, osteoporosis in 5, uveitis in 2, anemia in 3 and autoimmune hepatitis in 1 case. The first case series on CD was published from Southern India in 2005,detailing 10 children (5-15 years) with Crohn's disease.[8] There was female preponderance (9 out of 10), and interestingly, 50% of the children had received antitubercular therapy prior to diagnosis. Another tertiary referral center from Southern India reported 34 children with IBD (23 with CD and 11 with UC). These cases accounted for 7% of the total IBD load presenting to that centre. The proportion of IBD was 0.03% of all pediatric cases presenting to the outpatient department, and the median delay in diagnosis was 15 months.[9]

A complete blood count with ESR, liver function tests iron status and CRP should be done in all cases of suspected IBD. Stool culture is necessary to rule out infectious diarrhea. Clostridium difficile toxin should be investigated in a fresh stool sample, especially if the child has received multiple antibiotics.[10] However, it is pertinent to note that a documented enteric infection does not rule out the possibility of IBD. Anemia, thrombocytosis, hypoalbuminemia with increased ESR and CRP values are expected in patients with IBD. However, the values may be falsely normal in mild UC (54%) or mild CD (21%).[11] Serological markers and stool tests Antibodies to anti-Saccharomyces cerevisiae (ASCA) are associated with 60% cases of CD; while perinuclear antineutrophil cytoplasmic antibodies (p-ANCA) are

associated with 60% of cases with UC. As, there is considerable overlap among the antibodies with each other and for other diseases like tuberculosis, they cannot be used in isolation to diagnose IBD. Additional markers like anti-E. coli outer membrane porin C antibody (anti-OmpC), antibodies to bacterial flagellin (anti-CBir1) and anti-glycan antibodies are being studied.[12]

CONCLUSION

Author found that common clinical features were abdominal pain, diarrhoea, fever, weight loss, perianal disease and hematochezia.

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