

**INFLAMMATORY BOWEL DISEASE: AN OBSERVATIONAL STUDY ON RISK  
FACTORS AND MEDICATION MANAGEMENT****Dr. Nuzhath Irfana<sup>\*1</sup>, Ayesha Wajid<sup>2</sup>, Mohd Shoaib<sup>3</sup> and Sumayya Sultana<sup>4</sup>**<sup>1</sup>Assistant Professor, Nizam Institute of Pharmacy, Deshmukhi.<sup>2,3,4</sup>Pharm. D Student, Nizam Institute of Pharmacy, Deshmukhi.**\*Corresponding Author: Dr. Nuzhath Irfana**

Assistant Professor, Nizam Institute of Pharmacy, Deshmukhi.

Article Received on 20/08/2023

Article Revised on 10/09/2023

Article Accepted on 30/09/2023

**ABSTRACT**

**Inflammatory Bowel Disease (Ibd):** Inflammatory bowel disease (IBD) is a term used to describe a range of idiopathic chronic inflammatory bowel diseases. Crohn's disease (CD) and ulcerative colitis (UC) are the two main disease groups, with both overlapping and unique clinical and pathological features.<sup>[1]</sup> **Methods:** 20 patients were enrolled in the study, which includes all Inpatients and Outpatients diagnosed with IBD, this study was done to have better understanding of disease. Data from patients was gathered. All information relevant to the study were collected at the time of admission till the date of review follow up and the data was analysed after entering into Microsoft excel sheet and frequency tables was calculated using suitable method for statistical analysis. This Study was conducted at care hospital and the references were identified with related article searches. **Results:** Our study results show the possible risk factors associated with the disease. Of the 20 cases, the average age group of those affected was 30–40 years old, with females being more susceptible. The patients were separated into groups based on their risk factors: 10% were smokers, 10% were alcoholics, 30% were obese, 50% were idiopathic, and 20% were using oral contraceptives. In our study, oral mesalamine was provided to 7 patients (35%), topical mesalamine (enema) to 3 patients (15%), and steroids with infliximab to 2(15%) to reduce inflammation and for mucosal healing. **Conclusion:** IBD is chronic remitting and relapsing disease with mostly idiopathic etiology. Our study results show the possible risk factors associated with the disease and support the hypothesis of an increased risk of inflammatory bowel disease due to obesity. We also found that smoking, alcohol consumption and oral contraceptives have a deleterious impact on inflammatory bowel illness. Medication management is mostly by mesalamine (oral and topical), steroids and antibiotics with supportive management.

**INTRODUCTION****INFLAMMATORY BOWEL DISEASE (IBD)**

Inflammatory bowel disease (IBD) is a term used to describe a range of idiopathic chronic inflammatory bowel diseases. Crohn's disease (CD) and ulcerative colitis (UC) are the two main disease groups, with both overlapping and unique clinical and pathological features.<sup>[1]</sup>

**TYPES OF IBD**

The two most common types of inflammatory bowel illness are Crohn's disease and ulcerative colitis. Each of these disorders is divided into subgroups based on the part of the digestive system that is affected. A variety of different conditions can induce inflammation of the large intestine (colon). Although these diseases are less common, they share many of the same symptoms.

**RISK FACTORS**

Something that raises the chances of having an illness or condition is referred to as a risk factor. Inflammatory bowel disease can occur with or without the risk factors.

**The following are some of the risk factors**

**Genetic Factors:** Having a family member with inflammatory bowel disease raises your chances of contracting it.

**Smoking:** Cigarette smokers are twice as likely as non-smokers to get CD. Smoking exacerbates the disease's clinical course, increasing the chance of recurrence and the necessity for surgery. Nonsmokers and individuals who have just stopped smoking are more likely to develop UC, especially in the first 2–5 years after quitting. All IBD patients should be urged to quit smoking because of the numerous health advantages. however, UC patients should be informed that stopping smoking increases the chance of a flare-up. Although smoking increases the risk of Crohn's disease, it appears to reduce the chance of ulcerative colitis. In addition, ex-smokers are at risk.

**Socioeconomic Factors:** Inflammatory bowel disease appears to affect those from higher socioeconomic levels and those who work in white-collar occupations more frequently

**Diet:** A high-fat, high-sugar, and high-meat diet may raise the risk of Crohn's disease and ulcerative colitis. Consumption of certain foods is linked to an increased risk of getting IBD like eating more meat and lipids, especially polyunsaturated fats and omega-6 (n-6) fatty acids. There are dietary changes that can assist people with IBD to improve their health.<sup>[2]</sup>

## MEDICATIONS

**ANTIBIOTICS** have been linked to the development of IBD. Antibiotics should only be used when absolutely necessary. Even if antibiotic usage is linked to the development of IBD, it's vital to stick with the doctor's recommendations because the benefits should exceed the dangers. Unnecessary usage, on the other hand, should be avoided.

**NONSTEROIDAL ANTI-INFLAMMATORY MEDICATIONS (NSAIDS)**, such as ibuprofen and naproxen (Advil, Motrin, etc.) (Advil, Motrin, Aleve, Naprosyn) as well as acetylsalicylic acid (ASA, Aspirin) were thought to be associated with worsening IBD symptoms at one time. Recent research has revealed no indication that using these medicines causes IBD. However, several people have reported that their IBD began after taking NSAIDs. It's still up for dispute whether NSAIDs may make IBD worse. When these drugs are taken on a regular basis by persons who do not have IBD, they might induce stomach irritation and even ulcers in the stomach or intestine.

**RETIN-A (ISOTRETINOIN) (ACUTANE).** In North America, there are claims alleging that this acne medication caused IBD. There has been no evidence of a link between isotretinoin usage and the development of IBD in large population studies.

**IMMUNOTHERAPY FOR CANCER.** This method of treatment involves the use of medications that prevent the action of certain enzymes in the body.

**CTLA-4**, as well as another protein known as PD-1, has transformed the treatment of malignancies such as melanoma and kidney cancer. Irritable bowel disease (IBD) is a condition that can be caused by certain medications. It is uncertain how frequently intestinal inflammation may become chronic, although it is known that it can do so in some cases, such as in IBD. Steroids and, in certain cases, anti-TNF drugs are used to treat it. It is uncertain whether people with IBD who get this cancer therapy are at an elevated risk of intestinal injury.

**EARLY CHILDHOOD:** Antibiotic usage and the presence of early-life infections have both been identified as risk factors for the development of IBD. Maternal infections before to birth or at the moment of birth, style of delivery (i.e., caesarean section vs vaginal delivery), or perinatal indices of health (i.e. birthweight, APGAR score, gestational age) had no effect on the risk

of IBD. It's likely that the order in which specific foods are introduced to newborns has an influence on their growing gut microbiota, particularly in the first year of life, and that this has a good or negative impact on the risk of IBD

## MICROBES IN THE GASTROINTESTINAL (GI)

**TRACT:** Our bodies contain more microbe cells (bacteria, viruses, fungus, and protozoa) than human cells. These microorganisms play an important role in food digestion and human defences against dangerous germs. IBD is that aberrant inflammation is caused by a shift in the balance of beneficial and bad microorganisms in the gut.

**APPENDECTOMY:** Appendix removed after the age of ten increases chances of developing Crohn's disease. In fact, in the first year after an appendectomy, the risk increases by 6.7 times. Appendectomy surgery appears to lower the chance of developing ulcerative colitis, especially in children under the age of ten.

**BACTERIA:** The presence of certain bacteria in the colon could help contribute to IBD. Bacteria are a natural part of the colon and most of the bacteria promote a healthy digestive system, but the harmful bacteria can cause problems.<sup>[3]</sup>

## TREATMENT

### Pharmacological Treatment

The following medications are used to treat ulcerative colitis or Crohn's disease:

- Amino salicylates, also known as mesalamines, are a type of amino acid that can help to reduce stomach inflammation.
- Corticosteroids and immunosuppressants are used to treat moderate-to-severe chronic diseases and to alleviate disease symptoms.
- Biological and biosimilar medicines, such as infliximab, TNF inhibitors, adalimumab, and golimumab, are antibody-based injectable treatments that target a specific portion of the immune system.
- Amoxicillin, ciprofloxacin, metronidazole, and azithromycin are antibiotics that can help with CD symptoms.
- Sucralfate, carboxymethylene glucose, or hydrocortisone are medicines used to treat oral lesions in CD. Surgical treatment can be considered if medicinal treatments do not alleviate IBD symptoms.<sup>[4]</sup>

CLASS OF THE DRUG	NAME OF DRUG	MECHANISM OF ACTION	THERAPEUTIC INDICATION
ANTIINFLAMMATORY	Amino salicylates / mesalamine	mesalazine diminishes inflammation by blocking cyclooxygenase and inhibiting prostaglandin production in the colon.	Mesalazine is indicated for the induction of remission in patients with active or mild to moderate acute exacerbations of ulcerative colitis and for the maintenance of remission of ulcerative colitis.
CORTICOSTEROIDS	Prednisone/ budesonide hydrocortisone wysolone	The short term effects of corticosteroids are decreased vasodilation and permeability of capillaries, as well as decreased leukocyte migration to sites of inflammation.	Budesonide extended release capsules are indicated for the treatment and maintenance of mild to moderate Crohn's disease.
BIOLOGICAL AGENTS	Azathioprine/ mercaptopurine Infliximab Adalimumab Golimumab Certolizumab Vedolizumab	Infliximab is a IgG1 $\kappa$ monoclonal antibody that binds to soluble and transmembrane forms of TNF- $\alpha$ with high affinity to disrupt the pro-inflammatory cascade signaling.	Indicated for reducing signs and symptoms and maintaining clinical remission in patients with moderate-severe active Crohn's disease who have had an inadequate response to conventional therapy.
ANTIBIOTICS	Amoxicillin Ciprofloxacin Metronidazole Azithromycin Cyclosporine		Used for the treatment of ulcerative colitis.
ANTIEMETICS	Ondansetron	Ondansetron is a selective antagonist of the serotonin receptor subtype, 5-HT <sub>3</sub> , treats postoperative nausea and vomiting	The prevention and treatment of postoperative nausea and vomiting.
ANTACID	Pantoprazole Omeprazole Rabeprazole	Pantoprazole is a proton pump inhibitor (PPI). It works by decreasing the amount of acid produced by the stomach.	Maintenance of healing.
PROBIOTICS	Lactobacillus Saccharomyces boulardi	probiotic bacteria can prevent or minimize intestinal inflammation	Through direct contact with immune cells, it maintains immunologic balance in the GIT. In Crohn's disease, it is widely established that diverting the faeces contributes to mucosal repair.

### MESALAMINES (5-ASA)/AMINOSALICYLATES

Anti-inflammatory amino salicylates are used to treat inflammatory bowel disease and some types of arthritis. Ulcerative colitis, proctitis, and Crohn's disease are all treated with aminosaliculates.

5-ASA medications come in a variety of forms, including:

Salazopyrin, Sulazine, and Azulfadine are brand names for sulfasalazine (sulphasalazine).

Mesalamine is an amino salicylate medication that is used to treat mild to moderate active ulcerative colitis, as well as to keep it in remission after it has been established.

**DOSE:** 1.2 gm

**ADR:** Flatulence, headache, itching, diarrhea, nausea, stomach/epigastric pain, dizziness, joint pain, muscle pain Vomiting.

**CI:** Mesalamine or salicylate hypersensitivity. Breastfeeding.<sup>[5]</sup>

**BUDESONIDE:** Budecort is a steroid that helps the body minimize inflammation. It's used to treat adults with mild to moderate Crohn's disease.

**DOSE:** oral extended-release capsule (6 mg; 9 mg); oral delayed-release capsule (3 mg); oral extended-release tablet (9 mg)

**CI:** Thinned skin, easy bruising, increased acne or facial hair; swelling in the ankles, weakness, exhaustion, or a light-headed feeling as though you might pass out; nausea, vomiting, rectal bleeding, pain or burning when urinating; menstruation difficulties (in women).

**WARNING:** breast-feeding is not encouraged.<sup>[6]</sup>

**PREDNISONE:** Prednisone is a corticosteroid that is used to treat inflammation. It inhibits the release of inflammatory chemicals in the body. It also causes the

immune system to be suppressed. Prednisone is an anti-inflammatory and immunosuppressive drug. Prednisone is used to treat a variety of illnesses, including allergic reactions, skin ailments, ulcerative colitis, arthritis, lupus, psoriasis, and breathing problems.

**SIDE EFFECTS:** it includes red, tarry stools, hypokalemia, and pancreatitis.

**HYDROCORTISONE:** For ulcerative colitis, a hydrocortisone enema is recommended.

**DOSE:** granules (0.5 mg, 1 mg, 2 mg, 5 mg); tablet (0.5 mg, 1 mg, 2 mg, 5 mg); granules (0.5 mg, 1 mg, 2 mg, 5 mg); tablet (0.5 mg, 1 mg, 2 mg, 5 mg); granules (0.5 mg, 1 mg, 2 mg, 5 mg); (10 mg; 20 mg; 5 mg)

**SIDE EFFECTS** include blurred vision, eye pain or redness, muscle weakness, muscle mass loss, new or unusual pain in joints, bones, or muscles, severe headaches, ringing ears, pain behind the eyes, unusual changes in mood or behavior, seizure, fluid retention, shortness of breath (even while lying down), swelling, and rapid weight gain (particularly in the face and midsection).

**WARNING:** This product contains a systemic fungal infection.

#### **AZATHIOPRINE/MERCAPTOPYRINE**

Dose: oral tablet of azathioprine/mercaptopurine (100 mg, 50 mg, 75 mg)

**SIDE EFFECTS:** Hives, difficulty breathing, and swelling of the cheeks, lips, tongue, or neck are all indicators of an allergic reaction.

Azathioprine has been linked to a lethal type of lymphoma (cancer) of the liver, spleen, and bone marrow. This has mostly happened in Crohn's disease or ulcerative colitis-affected teenagers and young men.

**INFLIXIMAB:**Infliximab is a chimeric monoclonal antibody that has been approved for both CD and UC treatment. It's given as an intravenous infusion with a weight-based dosage (5 mg/kg, typical). Biologics have been around for almost 20 years. It changed the way chronic inflammatory illnesses, such as IBD, were treated. Biologic agents are pharmaceutical products produced from natural sources, such as monoclonal antibodies, which are large protein-based therapeutic agents often created from living cell lines utilizing recombinant DNA technology. Such medicines almost always target specific mediators in major immunological and inflammatory pathways, allowing for selective but powerful control. (Remicade, Inflectra, Renflexis, Ixifi, Avsola)

**DOSE:** 100 mg/vial

Side effects include allergic reactions, lupus-like syndromes (immune system reactions), and dangerous infections like tuberculosis (TB) or hepatitis B.

**CI:** Active severe illnesses, documented hypersensitivity, and patients with moderate-to-severe heart failure should receive doses of more than 5 mg/kg. There is a serious risk of infection.

**CIPROFLOXACIN:** Cipro (ciprofloxacin) is a prescription antibiotic with the brand name Cipro. It's used to treat bacteria-caused illnesses. Cipro is a fluoroquinolone antibiotic, which means it belongs to a group of antibiotics known as fluoroquinolones. Cipro is an antibiotic that can be used to treat infections caused by a variety of bacteria. Cipro is a fluoroquinolone antibiotic, which means it belongs to a group of antibiotics known as fluoroquinolones. Ciprofloxacin is an antibiotic that can be used to treat infections caused by a variety of bacteria.

**DOSE:** Cipro tablets: 250 mg, 500 mg, 750 mg, Cipro XR tablets: 500 mg, 1,000 mg, Ci

**SIDE EFFECTS:** Tendon tears or swelling, liver illness, and major allergy infections are all possible side effects. Tendinitis, tendon rupture, arthralgia, myalgia, peripheral neuropathy, and central nervous system symptoms (hallucinations, anxiety, depression, sleeplessness, severe headaches, and confusion) are all common side responses.

**WARNING:** pregnancy.<sup>[7]</sup>

**ONDANSETRON:** Ondansetron is a serotonin 5-HT<sub>3</sub> receptor antagonist used to prevent nausea and vomiting in cancer chemotherapy and postoperatively.

**DOSE:** 4mg, 8mg

**SIDE EFFECTS:** Serotonin syndrome. Symptoms can include: agitation, hallucinations, rapid heartbeat, Sweating, muscle rigidity (stiffness), tremor, nausea, vomiting, diarrhea, coma.

**WARNINGS:** Serotonin syndrome warning: Ondansetron raises your risk of a life-threatening condition called serotonin syndrome.

**PANTOPRAZOLE:** Pantoprazole belongs to a class of drugs called proton pump inhibitors. It works to shut off the acid-pumping cells in your stomach. It reduces the amount of stomach acid and helps to reduce painful symptoms related to conditions such as GERD.

**DOSE:** 40mg

**SIDE EFFECTS:** Low magnesium levels, Vitamin B-12 deficiency., Severe diarrhea, Bone fractures, kidney damage, Fundic gland polyps

**WARNINGS:** Severe diarrhoea, SLE, serious infection, fundic gland polyps.<sup>[8]</sup>

### ULCERATIVE COLITIS

- **MILD TO MODERATE DISEASE**

Most patients with mild to moderate active UC can be treated with oral and/or topical mesalamine in an outpatient setting. Sulfasalazine is commonly taken orally at a dose of 4 to 6 grams per day to treat active inflammation.

Sulfasalazine therapy should be started at 500 mg/day and gradually increased to 4 g/day or the maximum tolerated dose every few days.

Oral mesalamine derivatives are a better tolerated alternative to sulfasalazine for the treatment of UC.

- **MODERATE TO SEVERE DISEASE**

Steroids can be used to treat moderate-to-severe UC, as well as those who do not respond to maximal doses of oral and topical mesalamine. Adults should take 40 to 60 mg of oral prednisone every day.

Patients with moderate to severe active UC who have not responded to steroids or other immunosuppressive medications may benefit from infliximab.

- **SEVERE OR INTRACTABLE DISEASE**

For appropriate care, patients with uncontrolled severe colitis or incapacitating symptoms must be admitted to the hospital. The parenteral method is used to provide the majority of medications.

A first-line treatment is IV hydrocortisone 300 mg three times a day or methylprednisolone 60 mg once daily.

Unless the illness is grave or rapidly developing, most people should try steroids first before having a colectomy.

Cyclosporine or infliximab can be given to patients who have not responded to parenteral corticosteroids after 3 to 7 days. The average dosing range for cyclosporine is 2 to 4 mg/kg/day, which can help to postpone the need for a colectomy.

### MAINTENANCE OF REMISSION

The goal of therapy is to keep the patient in remission from active disease once it has been achieved.

Sulfasalazine, mesalamine, and balsalazide are all effective oral agents. Choices for ongoing treatment 2 to 2.4 g/day is the best dose for preventing recurrence.

Relapse rates have been reported to be as high as 40% after 6 to 12 months on mesalamine equivalent.

Steroids aren't used to keep UC patients in remission because they're ineffective, After achieving remission (over time) in two to four weeks, steroids should be gradually tapered off.

### CROHNS DISEASE

Mesalamine derivatives that cause the body to release mesalamine (e.g., Pentasa and Asacol), the use of mesalamine derivatives in the treatment of CD has not been proven to be useful. They are widely used as an initial treatment for mild to moderate CD because of their minimal risk of side effects.

Prednisone (40–60 mg/day) and other oral corticosteroids budesonide (Entocort) at a dose of 9 mg daily are frequently recommended and are first-line medications that are typically used to treat moderate-to-severe ileal or right-sided colon sickness.

Some CD patients, particularly those with colonic or ileocolonic involvement, perineal disease, or those who are unresponsive to sulfasalazine, may benefit from metronidazole, which is given orally in divided doses of 10 to 20 mg/kg/day.

Azathioprine and mercaptopurine aren't recommended for establishing remission in moderate to severe CD, but they can help keep steroid-induced remission going. They're usually reserved for individuals who don't get adequate remission with conventional treatments. The typical doses of azathioprine and mercaptopurine are 2 to 3 mg/kg/day for azathioprine and 1 mg/kg/day for mercaptopurine, respectively, in the case of steroid dependency or in response to regular medical care.

Infliximab is an immunosuppressive drug that is used to treat active Crohn's disease in people who have tried and failed immunosuppressive treatments and been prescribed corticosteroids. When given as a single infusion of 5 mg/kg, it is effective.

For eight weeks, every day was Additional dosages are given two and six weeks after the original treatment. As a result, the response rate has risen. Antibodies to infliximab may develop in certain people can cause significant infusion reactions and a failure to respond to therapy.

Adalimumab and certolizumab are effective in treating people with moderate to severe cancer.

For patients who have stopped responding to infliximab for Crohn's disease, Natalizumab is a medicine that is only prescribed for those who do not respond to steroids or TNF inhibitor therapy.

### REMISSION MAINTENANCE

Preventing recurrence in Crohn's disease is significantly more difficult than in ulcerative colitis. Sulfasalazine and oral mesalamine derivatives are effective in avoiding

acute recurrences in people with quiescent Crohn's disease. Systemic steroids and budesonide are also unsuccessful in avoiding recurrence of Crohn's disease because they do not appear to alter the illness's long-term course. Budesonide can be taken as a maintenance medicine for up to a year, particularly in people who have become reliant on corticosteroids and are able to switch to budesonide. Azathioprine and MP are effective in maintaining CD remission in up to 70% of patients, particularly in infliximab-or steroid-induced remission.<sup>[9]</sup>

#### NON-PHARMACOLOGICAL TREATMENT

- Cessation of smoking.
- Avoid intake of alcohol.
- Avoid stress.
- Avoid Spicy foods.
- Avoid foods that cause indigestion and increase the symptoms.
- Avoid Citrus fruits and dairy products like chocolates.
- Avoid skipping of meals.
- Avoid use of drugs especially Aspirin and promote Acetaminophen use.
- Avoid corticosteroid use.
- To incorporate use of omega 3 fatty acids in the diet as these fats may have anti-inflammatory effect (mostly found in fishes)
- NSAID and corticosteroid should not be used for 6 weeks (healing time) when therapy is initiated.<sup>[10]</sup>

#### AIMS AND OBJECTIVES OF THE STUDY

**PRIMARY OBJECTIVE:** A Prospective, observational study on the risk factors and management of inflammatory bowel disease.

#### SECONDARY OBJECTIVE

1. To assess the demographic details and medication history of the patient.
2. To study the factors that could affect the progression/ occurrence of IBD.
3. To have better understanding of disease.
4. Information to promote optimal medication therapy.
5. To educate patient about the disease and its management.

#### METHODOLOGY

Study Design: Prospective observational study

Sample Size: 20

Study Site: Care hospital, Hi-tech city, Hyderabad.

Study Duration: 6 months

Study Criteria: To observe the disease risk factors and medication management in the OP and IP patients.

**STUDY DESIGN:** The study is prospective and observational.

#### SOURCE OF DATA AND MATERIALS

- Patient consent form.
- Patient data collection form.

- Patient case note/prescription.
- Patient information leaflet.

#### INCLUSION CRITERIA

- All Inpatients and outpatients diagnosed with IBD.
- Patient who are willing to give consent.

#### EXCLUSION CRITERIA

- Paediatric patients.
- Pregnant women.
- Patients who are not willing to give consent.

**METHOD OF DATA COLLECTION:** Data collection form.

**STUDY PROCEDURE:** This is an observational study to know the better understanding of disease. The data collection form was prepared and used. This form mainly contains the demographic details of the patient and medication chart. Study was conducted at care hospital. All information relevant to the study was collected at the time of admission till the date of review follow up and the data was analysed after entering into Microsoft excel sheet and frequency tables was calculated using suitable method for statistical analysis.

**PLAN OF WORK:** Step1: Preparation of data collection form:

A suitable data collection form is prepared to collect the details on the following:

- Patient's medical history.
- Patient's risk factors.
- Patient's diagnosis.
- Patient's medication.

Step 2: Data Collection

Step 3: Assessment and classification of collected data

- Medication prescription pattern.

- Assessment of risk factors.

- Patient's demographic data.

Step 4: Evaluation and analysis of the data collected

Step 5: Expected outcome:

Evaluation of risk factors and medication management to provide:

- To have better understanding of disease.
- Information to promote optimal medication therapy.

**DOES THE STUDY REQUIRE ANY INVESTIGATION OR INTERVENTION TO BE CONDUCTED ON PATIENTS? NO**

**HAS ETHICAL CLEARANCE BEEN OBTAINED FROM YOUR INSTITUTION IN CASE OF ABOVE?**

Yes, the ethical committee clearance was obtained from the Institutional Ethical Committee of CARE HOSPITAL before initiating the study.

**DURATION OF THE STUDY:** The study was conducted for a period of 6 months.

**PLACE OF STUDY:** The study was conducted at CARE HOSPITAL, Hi-tech city.

**DISTRIBUTION OF PATIENTS BASED ON GENDER:**

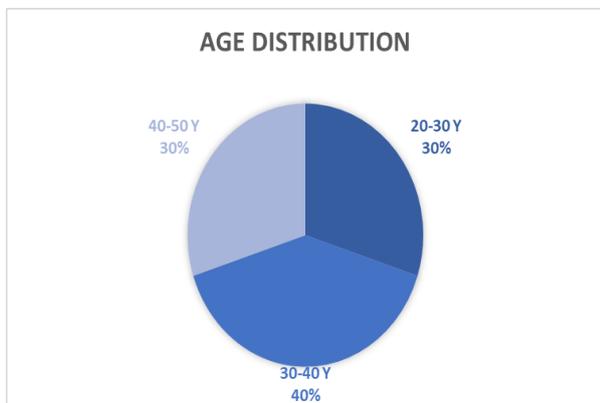
GENDER	MALE	FEMALE
NO. OF PATIENTS	8	12

No of males = 40%, No of females = 60%

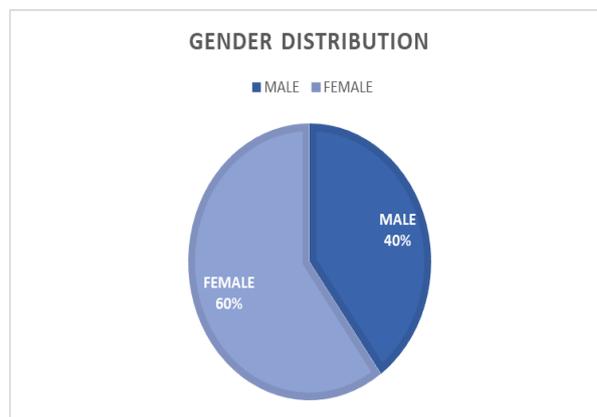
**RESULTS**

**DISTRIBUTION OF PATIENTS BASED ON AGE**

AGE	20-30 Y	30-40 Y	40-50 Y
NO. OF PATIENTS	6	8	6



The average age group of affected individuals was found to be 30-40 years of age.

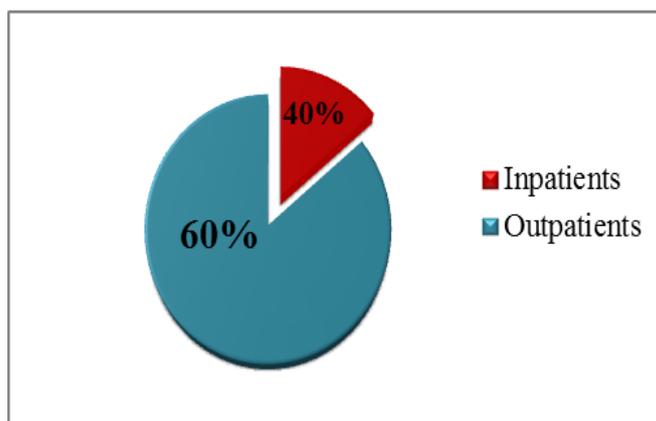


Out of a total of 20 cases studied, 40% were male and 60% were female patients.

**DISTRIBUTION OF PATIENTS BASED ON ADMISSION**

DEPARTMENT	INPATIENT (IP)	OUTPATIENT (OP)	TOTAL NO. OF PATIENTS
NO. OF PATIENTS	8(40%)	12 (60%)	20

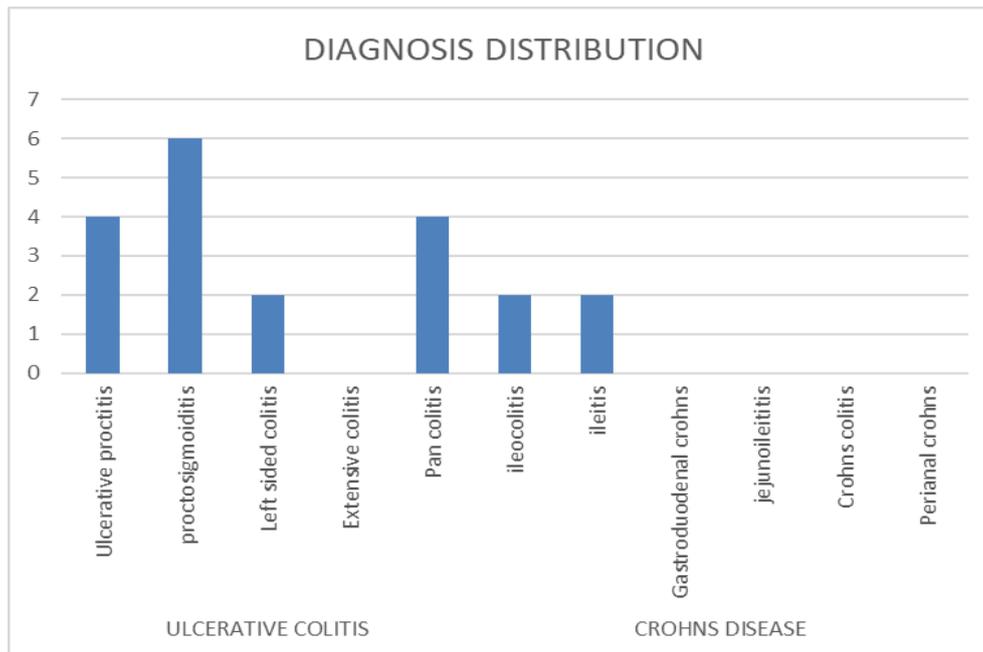
INPATIENT:40%    OUTPATIENT:60%



About 20 patients were included in the study of which 12 were Outpatients and 8 were Inpatients.

**DISTRIBUTION OF PATIENTS BASED ON DIAGNOSIS**

ULCERATIVE COLITIS					CROHNS DISEASE					
Ulcerative proctitis	proctosigmoiditis	Left sided colitis	Extensive colitis	Pan colitis	Ileo colitis	ileitis	Gastroduodenal Crohn's	Jejunoleitis	Crohn's colitis	Perianal Crohn's
4(20%)	6(30%)	2(10%)	0	4(20%)	2(10%)	2(10%)	0	0	0	0

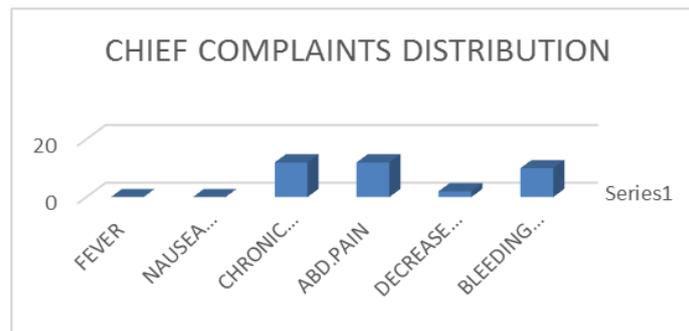


**DISTRIBUTION OF PATIENTS BASED ON CHIEF COMPLAINTS**

FEVER	NAUSEA /VOMITING	CHRONIC DIARRHOEA	ABD.PAIN	DECREASED APPETITE	BLEEDING P/R
0	0	12 (60%)	12(60%)	2(10%)	10(50%)

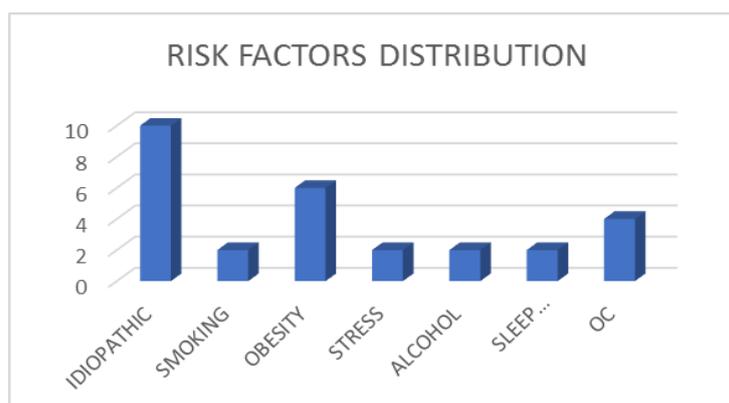
In our study, the 60% of the patients came with chronic diarrhoea, and abdominal pain, 50% of all the patients

came with bleeding per rectum, and 10% of population with decreased appetite.



**DISTRIBUTION OF PATIENTS BASED ON RISKFACTORS/ETIOLOGY**

IDIOPATHIC	SMOKING	OBESITY	STRESS	ALCOHOL	SLEEP DISTURBANCES	ORALCONTRACEPTIVES
10	2	6	2	2	2	4

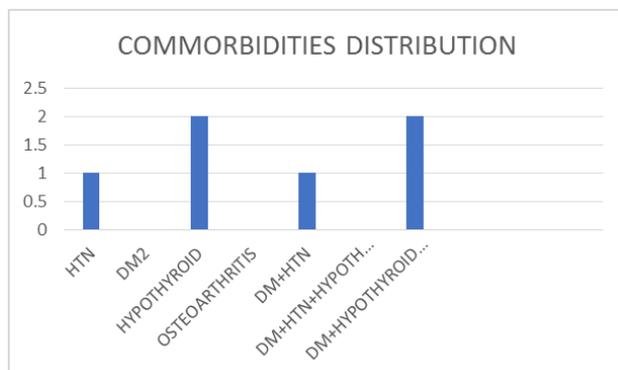


The patients were grouped based on their risk factors which included smoking, alcohol consumption and obesity, idiopathic, sleep disturbances, oral contraceptives. Out of 20 patients 10% of patients were

smokers with stress, 10% of patients were alcoholic, 30% were obese, 10% were suffering from sleep disturbances, 50% cases were idiopathic and 20% were on oral contraceptives.

#### DISTRIBUTION OF PATIENTS BASED ON COMMORBIDITIES

HT N	D M2	HYPOTHYROID	OSTEOARTHRITIS	DM+HTN	DM+HTN+HYPOTHYROIDISM	DM+HYPOTHYROIDISM+OSTEOARTHRITIS
1	0	2	0	1	0	2



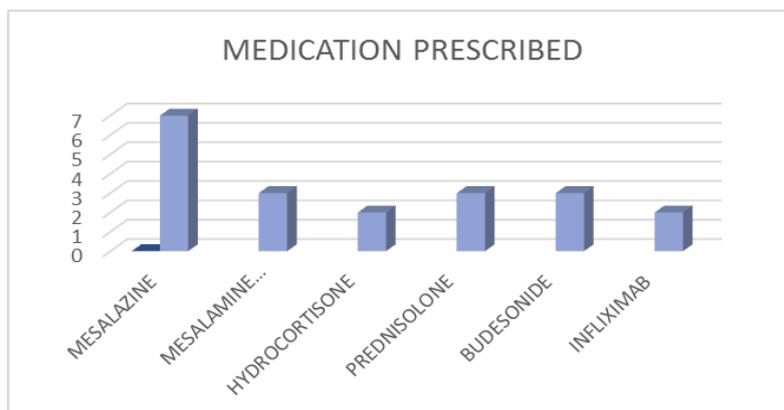
Of all the 20 patients only 10% were suffering from hypothyroidism and 10% were suffering from HTN+hypothyroidism, 5% were of hypertension 5% were of DM+HTN

#### DISTRIBUTION OF PATIENTS BASED ON MEDICATIONS

In our study, oral mesalazine was prescribed to 7 patients, and topical drug mesalazine (enema) was prescribed to 3 patients, steroids such as prednisolone and budesonide were prescribed to 3 patients with 2 patients were prescribed hydrocortisone and infliximab.

MESALAZINE (ORAL)	MESALAMINE (ENEMA)	HYDROCORTISONE	PREDNISOLONE	BUDESONIDE	INFLIXIMAB
7	3	2	3	3	2

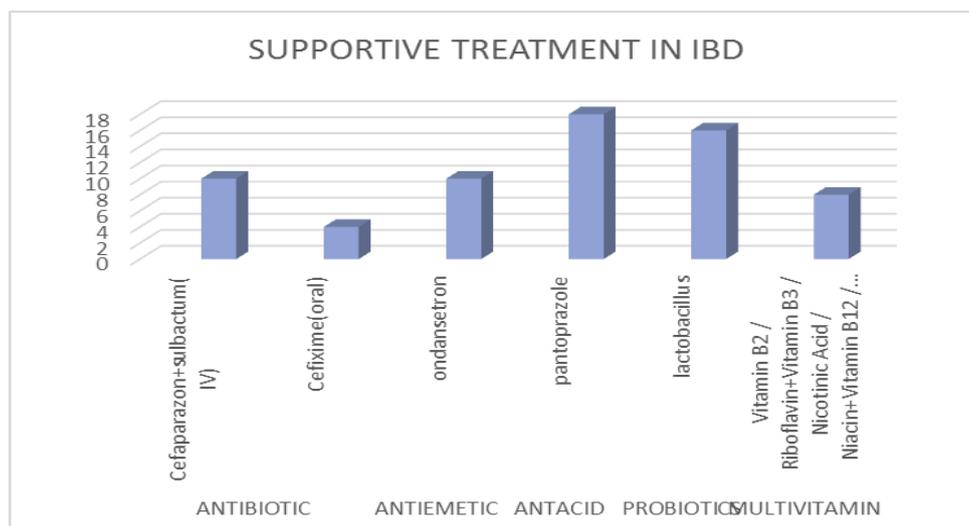
#### PRESCRIBED



#### SUPPORTIVE TREATMENT GIVEN IN IBD

ANTIBIOTIC		ANTIEMETIC	ANTACID	PROBIOTICS	MULTIVITAMIN
Cefaparazon+sulbactam(IV)	Cefixime (oral)	Ondansetron	pantoprazole	Lactobacillus	Vitamin B2 / Riboflavin+Vitamin B3 / Nicotinic Acid / Niacin+Vitamin B12 / Mecobalamin / Cynocobalamin / Methylcobalamin+Vitamin B6 / Pyridoxine+D-Panthenol+Vitamin B1 / Thiamine
10	4	10	18	16	8

Antibiotic (oral)= 50%, Antibiotic (IV)=20%, Antiemetic=50%, Antacid=90%, Probiotic=80%, Multivitamin=40%



In our study, oral mesalamine was prescribed to 7 patients, and topical drug mesalamine (enema) was prescribed to 3 patients, steroids such as prednisolone and budesonide were prescribed to 3 patients with 1 patient prescribed hydrocortisone and infliximab was given to 1 patient.

## DISCUSSION

- In our 6 months study, 20 patients were observed in Hyderabad's multi-specialty hospital. About 20 patients were included in the study of which 12 were Outpatients and 8 were Inpatients, 8 were males and 12 were females.
- In our study majority of the patients were females with (12)60% and males(8) 40%. A similar study conducted by Greuter T University Hospital Zurich, Zurich, Switzerland in 2020 also shows that females with an age of 25–29 years and particularly those older than 35 years are more prone to CD compared to their male counterparts.<sup>[11]</sup>
- Out of 20 patients enrolled we found that (2)10% of patients were smokers who developed CD. Similarly in a study of F.Carbonnel, it shows Smoking is a risk factor for CD and a protective factor for UC, appendectomy is a protective factor for UC.<sup>[12]</sup>
- In our study the age group of people included were 20-40years of age from which the average age group of affected individuals was found to be 30-40 years of age. A similar study Eric I. Benchimol, MD, PhD, Douglas G. Manuel, MD Changing Age Demographics of Inflammatory Bowel Disease in Ontario, Canada October 2014, the study shows that due to the general population's ageing, the median age of diagnosis increased from 37 to 39 years. The median age in Ontario increased from 37.6 years in 2001 to 40.4 years in 2011.<sup>[13]</sup>
- We found that, the 60% of the patients came with chronic diarrhea, and abdominal pain, 50% of all the patients came with bleeding per rectum, and 10% of population with decreased appetite. In 2000 research was done on the incidence of UC and CD by **Dominika Jakubczyk** MDPI, there are periods of

symptom exacerbation and remission. Symptoms of CD and UC include diarrhea (sometimes accompanied by bleeding), obstruction, stomach cramps and/or pain, weight loss, fever, weakness, tiredness, and starvation. Extra indicators of IBD can appear over time, and atypical symptoms can help diagnose the disease earlier in roughly 25% of those with early GI abnormalities. Nonetheless, the UD and CD groups have different rates of additional symptoms.<sup>[14]</sup>

- In our study, Oral mesalamine was prescribed to the greatest number of patients, followed by topical mesalamine (enema) and steroids for half of them, along with infliximab. In a similar study conducted by **R. Bergman, m. Parkes** at Box 201A, Addenbrooke's Hospital, Hills Road, UK in 2006, it states that 5-ASAs have largely replaced sulfasalazine as the first-line treatment for mild to moderately active UC and the maintenance of remission in UC in a number of countries since the early 1990s. UC is treated by topical and oral amino salicylates, such as liquid enemas, foams, gels, and suppositories. Even patients with severe sickness may benefit from mesalamines enemas, according to current research.<sup>[15]</sup>

## CONCLUSION

Our study focused on the risk factors and medication management of the inflammatory bowel disease.

- Females were at more risk than males which could be possibly be due to obesity and may be due to use of corticosteroids.
- The age group that was affected the most was 30-40 years in both males and females.
- The various demographic details that were taken into consideration are age, gender, weight, smoking, stress, alcohol, sleep disturbances and oral contraceptives. In our study, idiopathic was the major cause for 50% of the total patients taken into consideration. Remaining 30% were obese, 20% were on oral contraceptives, 10% of patients were

smokers with stress, 10% of patients were alcoholic and 10% were suffering from sleep disturbances.

- The chief complaints of the patient were also considered among all the 20 patients, out of which 60% of the patients came with chronic diarrhoea, and abdominal pain, 50% of all the patients came with bleeding per rectum, and 10% of population with decreased appetite.
- The medication history, when considered, was found to be that most of the patients were hypothyroid and osteoarthritis with hypertension + Diabetes mellitus.
- The overall diagnosis was done by colonoscopy after which biopsies were also taken to confirm the disease state. Etiology for most of the patients was idiopathic.
- According to the progression of the condition, a treatment approach was devised. Oral mesalamine was prescribed to the greatest number of patients in our study, followed by topical mesalamine (enema) and steroids for half of them, along with infliximab. Our study concluded that risk factors are associated with a few IBD cases were obesity, smoking, alcohol consumption and use of oral contraceptives while majority remained idiopathic.

## REFERENCES

1. World gastroenterology Organization, USA, Inflammatory bowel disease.
2. Sarah Cripps, the pharmaceutical journal, Inflammatory bowel disease: symptoms and diagnosis Gastrointestinal system 31 August 2021. 23.
3. IBD clinical and research centre, risk factors of IBD. 24.
4. Seyed Saeid Seyedian, Forogh Nokhostin, and Mehrdad Dargahi Malamir A review of the diagnosis, prevention, and treatment methods of inflammatory bowel disease, *Journal of medicine and life*, 2019 Apr-Jun. 39; 12(2): 113–122.
5. RXlistmesalaminearticle. Reviewed on 8/19/2021.
6. Cerner Multum Budesonidedrugs.com Medically reviewed by Drugs.com on Jul 29, 2020.
7. MEDSCAPE drugs and diseases, ciprofloxacin.
8. Stacey Boudreaux, PharmD Medical news today by University of Illinois-Chicago, Drug Information Group. on July 16, 2018.
9. Pharmacotherapy Handbook- Joseph T. Dipiro 9<sup>th</sup> edition- inflammatory bowel disease 226-228.
10. Duff, Whitney et al. “non-pharmacological therapies for inflammatory bowel disease: Recommendations for self-care and physician guidance.” *World journal of gastroenterology*, 2018; 24(28): 3055-3070. doi:10.3748/wjg.v24.i28.3055.
11. Greuter T gender differences in inflammatory bowel disease department of Gastroenterology and Hepatology, University Hospital Zurich, Zurich, Switzerland *Digestion*, 2020; 101(1): 98–104.
12. F. Carbonnel et al Environmental risk factors in Crohn's disease and ulcerative colitis: an update *SCIENCE DIRECT*, June 2009; 33(3): S145-S157.
13. Eric I. Benchimol, MD, PhD, Douglas G. Manuel, MD, MSc, et al Changing Age Demographics of Inflammatory Bowel Disease in Ontario, Canada: A Population-based Cohort Study of Epidemiology Trends, *Inflammatory Bowel Diseases*, 1 October 2014; 20(10): 1761–1769.
14. Dominika Jakubczyk MDPI KARGER, The Effectiveness of Probiotics in the Treatment of Inflammatory Bowel Disease (IBD)—A Critical Review Published: 2 July 2020.
15. R. Bergman, m. Parkes alimentary pharmacology and therapeutics, systematic review: the use of mesalazine in inflammatory bowel disease First published: 17 march 2006.