Original Article

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Clinical Profile and Colonoscopic Findings in Patients with Ulcerative Colitis at a Tertiary Care Hospital in Nepal: a Cross Sectional Study

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Introduction

Inflammatory Bowel Disease comprises conditions characterized by chronic or relapsing immune activation and inflammation within the gastrointestinal tract (GIT).[1] Crohn's Disease (CD) and Ulcerative Colitis (UC) are the two major forms of IBD.

Ulcerative colitis is one of the common aetiology of lower GI bleed. The presenting symptom of Ulcerative Colitis are rectal bleeding, bloody diarrhea, tenesmus, chronic diarrhea with passage of mucus and crampy abdominal pain.[2] Ulcerative Colitis is a condition in which the inflammatory response and morphologic changes remain confined to the colon.[3] The rectum is involved in 95% of patients.[4]

The diagnosis is usually established through a global assessment of the clinical presentation, radiographic, colonoscopic and histological findings consistent with UC. Colonoscopy is an invasive procedure used for detection and management of various diseases of rectum, colon, and terminal ileum including ulcerative colitis.[5] Direct visualization of pathological lesions and its use in taking tissue biopsies with confirmation by histology makes it investigation of choice for colonic pathology. Patients with long-standing ulcerative colitis are at increased risk for the development of intraepithelial neoplasia and carcinoma of colon.[6,7]

Abstract

Background and aims: Ulcerative Colitis (UC) is an inflammator condition confined to the colon. Ulcerative colitis commonly presents with rectal bleeding, bloody diarrhea and abdominal pain. This research was undertaken to study the clinical profile and colonoscopic findings of the patient presenting with ulcerative colitis in a tertiary care center at Gandaki Province,Nepal .

Methods: A hospital based prospective observational study was conducted from November 2017 till June 2020 in department of Medicine at Manipal teaching Hospital, Pokhara, Nepal after obtaining ethical approval from Institutional Research Committee and informed consent from patients or their relatives. Clinical profile and colonoscopic findings of patients with Ulcerative colitis were studied.

Results: Results: Out of 274 colonoscopies, 60 patients (M:F= 3: 2) were diagnosed with UC. The mean age of subjects was 37±3.56 years. Chronic diarrhea and bloody diarrhea were the common presenting symptomps. Only proctitis (E1) was seen in 40 %, left sided colitis in 35% and pan colitis (E3) was observed in 25%. Rectal involvement and erythema was observed in all. Loss of vascularity (96.7%), erosions (93.3%), increased granularity (85%), followed by ulcers (73.3%) and spontaneous bleed on touch (50%) were the common findings in colonoscopy.

Conclusion: Lower GI bleed is a common presenting manifestation in ulcerative colitis. Proctitis followed by left sided colitis was the common sites of involvement. Majority presented with disease of moderate severity. Most common features in UC patients were universal involvement of the rectum alongside erythema and erosions, loss of vascularity, increased granularity, followed by ulcers and spontaneous bleed on colonoscopy.

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Studies are scanty in this part of the country regarding ulcerative colitis. Considering above facts this research was undertaken to study the clinical profile and colonoscopic finding of the patient presenting with ulcerative colitis in a tertiary care center at Manipal Teaching Hospital in Pokhara, Gandaki Province, Nepal .

Methodology

This observational, cross sectional hospital based prospective study was carried out in the unit of Medical gastroenterology under Medicine department at Manipal College of Medical Sciences and Teaching Hospital, Gandaki Province, Nepal from November 2017 to June 2020 for a duration of 32 months after obtaining ethical clearance from Institutional Research Committee (MEMG/IRC/332/GA) and informed consent from patient or patient relatives.

The sample size was collected using the formula,

$n = 4 \times p \times q / e^2$

Where,   p= prevalence

q= 1-p

e= margin of error (0.05 i.e. 5%)

From a previous study conducted in Nepal, prevalence of ulcerative colitis in patients undergoing colonoscopy was 10%.[8]

So, sample size n = (4 x 10 x 90)/25 = 144

The calculated minimum sample size was 144. A total of 286 colonoscopies were performed in 30 months which was the sample size more than adequate for the study.

All patients, irrespective of age, sex or co morbidities who underwent colonoscopy for rectal bleed or haematochezia or bloody diarrhea or chronic diarrhea with abdominal pain were enrolled in the study. Patient with lower GI bleed were first hemodynamically stabilized in the emergency or in ICU. Blood and blood products were transfused when required. History, physical examination and data considering demographic variables, clinical features, and symptomatology were recorded. Careful history on stool consistency, its frequency, presence of blood in stool etc and abdominal pain was taken. Data considering demographic variables, clinical features with fever, extra intestinal manifestations were documented. Blood investigations like complete blood count, platelets count, blood grouping, liver function test, prothrombin time/international normalized ratio (PT/ INR), coagulation profile were done. Ultrasonography of abdomen, CT abdomen was done when relevant. After taking proper consent, bowel preparation and pre medications, colonoscopy was performed. Bowel preparation was done with 2 liters of Poly Ethylene Glycol in patients with non active bleed. It was given 8 hours prior to procedure and patient kept on liquid diet from 24 hours prior to procedure. In case of acute emergency, only sigmoidoscopy after rectal enema was performed. A subset of patients who presented with acute flare up or active bleeding underwent unprepared sigmoidoscopy as well. During procedure patient was laid on left lateral position, intravenous Hyoscine butyl bromide was given. Each patient underwent endoscopic investigation by standard flexible colonoscope (PENTAX EPK 700, PENTAX JAPAN Inc). Colonoscopy findings were noted. Biopsy of tissue was sent for histopathology. The Truelove and Witt's score was used to classify severity of the disease (mild, moderate and severe). Montreal system of classification was used to describe the extent of the disease as E1 (limited to the rectum), E2 (distal to the splenic flexure) and E3 (extension proximal to the splenic flexure).

All patients who underwent colonoscopy for rectal bleed or haematochezia or bloody diarrhea or chronic diarrhea with abdominal pain were included. Patient with non specific colitis on colonoscopy and histology and patients with incomplete records or who fail to give informed consent were excluded from the study.

Statistical Analysis:

Data were collected covering the relevant parameters for the study. All categorical data were expressed in percent and absolute number. All numerical continuous data were expressed in mean ±SD. The data analysis was done using Statistical Packages for the Social Sciences (SPSS) 20. (IBM Corp. Released 2011. IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp.)

Results

A total of 286 patients underwent colonoscopy from November 2017 till June 2020. But 12 patients had to be excluded because of inadequate data. Finally a total of 274 patients were taken up for the study. The most common finding was non specific colitis in 64(23.3%), followed by ulcerative colitis in 60(21.9%), haemorrhoids in 36(13.1%) and polyps in 28(10.2%). Other findings were Chrons disease in 4(1.5%), colorectal cancer in 25(9.1%), diverticulum in 12(4.4%) and illeocecal tuberculosis in 62.2%) respectively. No abnormal findings were detected in 39(14.2%) colonoscopies.

Out of these 274 sample study, 64 patients were identified with IBD and 60 patients with ulcerative colitis. Only 4 patients had Chrons disease. The prevalence of ulcerative colitis was thus 21.9% in and around Gandaki Province in Nepal in the present study. Ulcerative colitis was 15 fold more common than Crohns disease. The mean age of these 60 subjects with ulcerative colitis was 37±3.56 years with a range of 18 – 56 years of age with 36 (60%) males and 24 (40%) females (M:F= 3:2). Patients with ulcerative colitis were further classified as per sex and age groups with maximum of 26 (43.3%) cases in 20-39 years of age group (Table 1).

Table 1: Age groups / sex distribution of patients with ulcerative colitis					
SEX	Age Groups				Total
	<20 yrs	20-39 yrs	40-59 yrs	≥60 yrs	
Male	4	15	11	6	36
Female	2	11	9	2	24

Chronic diarrhea in 57(95%), blood diarrhea in 54(90%), mucus in stool in 44(73.3%), tenesmus in 38(63.3), abdominal pain in 32(53.3%) and frank, fresh rectal bleeding in 31(51.7%) were the most common presentation in these patients with ulcerative colitis. Ten (16.7%) patients presented with shock with active lower GI bleed.
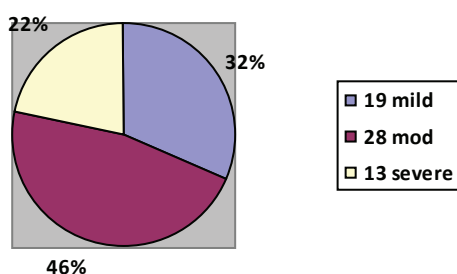
These subjects were classified according to their ethnicity/caste. Majority of subjects were found to belong from Mongols (32%) followed by Chhetris (18%), Brahmins (16.4%), Newars (13.8%) and Dalits (7.1%). Others caste included 12.7% of patients. Majority of these patients were farmers (31.7%) followed by retired personnel (28.4%), job holders (23.2%) and housewives (15.7%). Majority (54.3 %) were from rural areas whereas rest 45.7% belonged to urban regions. Majority (60%) of the patients were from middle socioeconomic status.

Among the clinical signs, pallor was the most common finding in 80%, followed by abdominal tenderness in 58.36%, weight loss in 40%, splenomegaly in 34%, fever in 30% and hepatomegaly in 12.5%. Clinically, 28 (46.7%) patients had moderate disease. Nineteen (31.7%) had mild disease and 13 (21.6%) had severe disease as depicted in pie diagram 1. Extra intestinal manifestations (EIM) in the form of arthralgia and arthritis were observed in 12(20%) patients and recurrent oral ulcers in 9 (15%) patients.
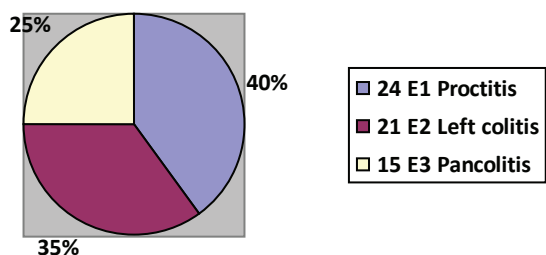
Mean haemoglobin at presentation was 11.3 gm% (range of 6.2 gm% to 13.5 gm%). Haemoglobin was <10.5 gm% in 22 (36.6%) subjects. Mean platelets count was 153,000 / mm3 with a minimum of 82,000/ mm3 and a maximum of 354,000/mm3. Liver function tests revealed hyperbilirubinemia in19 (31.7%) and increased ALT, AST, and prolonged Prothrombin time by more than 4 sec in 22 (36.7%), 19 (31.7%), and 19(31.7%) respectively. ESR was raised in 35 (58.3 %) patients. Average of 2.3 units of blood was transfused in 38 patients with active bleed or when haemoglobin was less than 10.5 gm%. None of the patient required surgical intervention and their symptoms were usually controlled by blood transfusion, IV fluids and IV medications including IV steroids and oral mesalazine . No inpatient mortality was reported.

Complete colonoscopy with visualization of terminal ileum could be performed in only 51(85 %) patients. Terminal ileum could not be intubated in 5 patients. Scope could not be negotiated beyond hepatic flexure in another subset of 4 patients.

Rectum was involved in all the cases. Twenty four (40%) patients had proctitis extending up to recto sigmoid junction (E1). Left sided colitis (E2) was observed in 21 (35%) patients and pan colitis (E3) was observed in 15(25%) patients as depicted pie diagram 2. Erythema was observed in all (100%). Loss of vascularity in 58(96.7%), erosions in 56(93.3%) and increased granularity in 51(85%), followed by ulcers in 44(73.3%) and spontaneous bleed on touch in 30 (50%) were the common findings in colonoscopy.

Pie Diagram 1: Severity of disease

Pie Diagram 2: Extent of disease

All cases of ulcerative colitis were histologically proven. The most common findings were lymphoplasmacytic infiltration in all (100%), glandular disruption in 58 (96.7%), cryptitis in 53 (88.3%) and crypt abscesses in 46(76.7%). Mild to moderate dysplasia was seen in 11(18.3%) cases but intra epithelial neoplasia or carcinoma was not detected.

Discussion

The prevalence of ulcerative colitis was 21.9% in the present study. Ulcerative colitis was seen in 10 % colonoscopies in a previous study by Chaudhary et al.[8] in Western Nepal. In a previous Nepalese study by Shrestha et al[9], ulcerative colitis was seen in 10.4 % colonoscopies.. This suggests that the incidence of ulcerative colitis or its detection rate may be rising in Nepal. Ulcerative colitis was seen among 24% colonoscopies in the study by Hazare et al.[11]

In an Indian study by Islam et al.[10], 27 patients were of Ulcerative colitis (UC) and 11 were of Chrons disease (UC:CD = 2.4:1). In the current study, presentation with Ulcerative colitis was even more compared to Chrons disease (UC: CD = 15:1).

In our current study, the mean age of subjects with ulcerative colitis was 37±3.56 years with majority of cases in age group of 20-39 years of age with male predominance (M:F= 3: 2). The mean age of the patients was 38.04 years with male dominance in an earlier study by Pathak et al.[12] in Nepal, which was almost similar to our findings. In the study by Islam et al,[10] majority of patients with ulcerative colitis were in the age group 20 – 39 years with M:F =2.9:2, findings similar to our study. Ulcerative colitis was frequent in younger age group below 50 years in the study by Alobaidi et al.[13] and Shrestha et al.[9] All these studies suggest that ulcerative colitis is commonly seen in young and middle age groups all over the world.

Majority of subjects were Mongols (32%) followe by Chhetris, Brahmins and Newars in the current study whereas, majority(55%) belonged to Brahmins in the study by Pathak et al.[12] This reflects the disease is seen among all ethnicity within Nepal.

The common clinical presentations of patients in our study were chronic diarrhea in 95% and blood mixed stools in 90% . Other findings were mucus in stool (73.3%), tenesmus (63.3%), abdominal pain (53.3%) and frank, fresh rectal bleeding (51.7%). Rectal urgency (100%) followed by increased frequency of stools (96.30%), blood in stools (92.59%), mucus in stools (88.89%), tenesmus (92.59%) and loose stools (88.89%) were the common presentations in the study by Islam et al.[10] findings, almost similar to ours. Rectal bleeding (85%) was more common than chronic diarrhea (70%) in the study by Pathak et al. Rectal bleeding (80%) was also the most common clinical feature in the study by Alobaidi et al.[13]

Haemoglobin of less than 10.5 gm% was observed in 36.6% subjects. Raised ESR and weight loss were seen in 58.3% and 40% respectively in the current study. Weight loss and anemia were one of the key features of UC patients in the study by Chikhaliya et al.[14] Blood investigation showed that 70% of the people had high ESR and 50% patients had anemia in the study by Meti et al.[17]

According to Silverberg et al.[15], up to 25% of patients with UC can present with extra intestinal manifestations (EIM) during their lifetime. The most common EIM was arthralgia and arthritis (20%) followed by recurrent oral ulcers (15%) in our study. In the Indian study by Meti et al.[16], 39% of patients had extra intestinal manifestations and the most common was arthritis (16%) The common extra intestinal manifestation were sacroiliitis in 31.9%, mouth ulcers in 23.4%, episcleritis in 8.6% and erythema nodosum in 2.1% in the study by Chikhaliya et al.14 More than one half of patients (UC 51.6 %) had one or more extra intestinal symptoms according to Makharia et al.[17] Extra intestinal manifestations (EIM) were found among 12% of patients by Pathak et al.[12]

Nineteen (31.7%) had mild disease and 13 (21.6%) had severe disease in the current study. Majority comprising of 28 (46.7%) UC patients were having moderate disease at presentation in the current study. It was similarly observed with 46% presenting with

moderate severity in a previous Nepalese study by Pathak et al.[12] Majority (59.26%) of cases were also of moderate activity in the study by Islam et al.[10] Pathak et al[12] reported that 12% were having severe cases which was lesser when compared to our study.

Most common site of involvement was rectum and seen in all 100 % in the current study. Twenty four (40%) subjects had proctitis extending up to recto sigmoid junction (E1). Left sided colitis (E2) was observed in 21(35%) patients and pan colitis (E3) was observed in 15(25%) patients. Rectum was similarly involved in all the cases in the study by Islam et al.[10] According to Pathak et al.[12] in a previous Nepalese study, 41% had E1, higher compared to ours. Pan colitis was seen in 13% in the previous Nepalese study by Pathak et al[12], lesser in comparison to ours. Contrary to above studies, Makharia et al[17] reported that majority (42.8 %) had pan colitis followed by left-sided colitis in 38.8 %, and proctitis alone in 18.3 % patients.

Rectal involvement and erythema in 100%, loss of vascularity in 96.7%, erosions in 93.3%, increased granularity in 85% followed by ulcers in 73.3% and spontaneous bleed on colonoscopy in 50% were the common findings in colonoscopy. Involvement of rectum with erythema in 100% was similarly observed by Islam et al.10 Similar were the other findings; loss of vascular pattern (85.19%), granularity and friability was seen in 81.48% of cases.[10]

Histology of the colonic mucosa suggestive of ulcerative colitis was evident with cryptitis in 88.3% and crypt abscesses in 76.7% in the current study. Mild to moderate dysplasia was seen in 18.3%. Cryptitis was seen in 95% of the histology in the study by Meti et al.[16] Dysplasia or atypia was detected in 9% whereas 2 % of patients histology showed underlying carcinoma.[16] No intraepithelial neoplasia or carcinoma was detected in any of our patients.

None of the patients in this study required surgical intervention and their symptoms were usually controlled by use of IV and oral medications. Similar were the findings by Chikhaliya et al.[14] However, four percent of patients with UC had undergone colectomy in the study by Makharaia et al.[17]

Limitation Of The Study

This study had its own limitations. The study reflects to a certain geographical area. Sample size was small. Many patients lost to follow ups and follow up colonoscopies could not be performed in all patients. Due to lack of sedation and abdominal pain and distension perceived by the patients, illeo ceacal intubation was not possible in a minority of cases.

Conclusion

Chronic diarrhea, bloody diarrhea, bleeding per rectum , chronic abdominal pain and anemia were the common presentation of patients with ulcerative colitis. It was more common among males and in younger age groups. Pallor was the most common finding followed by abdominal tenderness, weight loss, splenomegaly, fever and hepatomegaly. Majority of patients presented with disease of moderate severity. Proctitis followed by left sided colitis was the common sites of involvement. Pan colitis was seen in 1/4th of the patients. Most common features were universal involvement of the rectum alongside erythema and erosions, loss of vascularity, increased granularity, followed by ulcers and spontaneous bleed on colonoscopy

Recommendation

Colonoscopy or at least flexible sigmoidoscopy should be offered when the patients complain of fresh rectal bleeding or bloody diarrhea or chronic diarrhea and rule out causes like ulcerative colitis, colon polyps or colorectal carcinomas. This should be followed by histological assessment of tissue biopsies.

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