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HISTOMORPHOLOGICAL STUDY OF COLONOSCOPIC BIOPSIES IN PATIENTS PRESENTING WITH CHRONIC DIARRHEA

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ABSTRACT

Background: Diarrheal illness can be associated with significant morbidity and mortality, especially in very young, elderly population and those with co morbid medical illness. Diarrhea can be classified based on the duration into acute, persistent and chronic. Chronic diarrhea is defined in adults by abnormal stool weight (>200 g/day), consistency (loose or liquid), and/or frequency (>3 times/day) lasting for more than 4 weeks. **Aim & Objective:1.** Study Histo morphological study of colonoscopic biopsies in patients presenting with chronic diarrhea 2.Study incidence of pathological causes of chronic diarrhea. **Methods: Study design:** Prospective observational Study. **Study setting:** Department of Pathology, Dr. D.Y Patil Medical College and Research Institute, Kolhapur .**Study duration:** From September 2022 to September 2023. **Study population:** A total of 100 colonoscopic biopsies from the patients who presented with chronic diarrhea attending Department of Pathology, Dr. D.Y Patil Medical College and Research Institute, Kolhapur. **Sample size:** 100. **Results:** majority of cases were from 31-50 years age group e.g. 37 followed by 30 cases in 51-70 years age group,23 cases in above 70 years and 10 cases found in 18-30 years age group. most of the cases were Males contributing 67% and 33% were females. all cases presented with Diarrhea and associated with pain in abdomen 40 cases, 17 cases reported weight loss and 10 cases with fatigue. most of cases found with Ulceration 55 followed by Neutrophilic infiltrates 39, Cryptitis 26, Crypt abscess 22, Submucosal edema 18, Architectural distortion 15, Granulomas 12 and 10 cases found with Lymphoplasmacytic infiltration. majority of cases diagnosed with non specific colitis 34 followed by active and chronic colitis 30 cases, tuberculous colitis 11, ulcerative colitis 11,crohns disease 5, neoplasia 4, polyps 2, lymphocytic colitis 2 and 1 cases diagnosed with melanosis coli. **Conclusion:** Colonoscopic biopsies have increased the role of pathologists in the

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diagnosis and management of patients with chronic diarrhea so that proper clinicopathological correlation can be made to assess severity and to guide treatment accordingly.

Keywords: Colonoscopic biopsies, Histopathological findings,

INTRODUCTION:

Diarrheal illness can be associated with significant morbidity and mortality, especially in very young, elderly population and those with co morbid medical illness. Diarrhea can be classified based on the duration into acute, persistent and chronic. Chronic diarrhea is defined in adults by abnormal stool weight (>200 g/day), consistency (loose or liquid), and/or frequency (>3 times/day) lasting for more than 4 weeks. [1,2]

The primary causes vary depending on socioeconomic factors, referral status as well as the practice setting. In developing countries chronic bacterial, mycobacterial infection, and parasitic infestation are the most common causes of chronic diarrhoea whereas in developed countries, irritable bowel syndrome, inflammatory bowel disease, malabsorption syndrome, and chronic infections are the most common causes. [3–7]

Colonoscopy has been used to evaluate the large bowel, to screen colorectal diseases especially neoplasia and polyps [4,8,9] Colonoscopy visualizes the mucosa of the colon rectum and upto terminal ileum and checks for macroscopic lesions. Additionally, several procedures can be performed, especially biopsies. [10,11] Patients with chronic diarrhoea present a difficult diagnostic problem.

Histology is essential in the evaluation of chronic diarrhoea, because many etiologies are macroscopically not evident e.g., quiescent inflammatory bowel disease (IBD), microscopic colitis, eosinophilic colitis and amyloidosis. [1] In developing countries, most causes of chronic diarrhoea are non-infectious; include secretary diarrhoea, osmotic diarrhoea, fatty diarrhoea, inflammatory diarrhoea and functional diarrhea. [12]

This study was carried out with an aim to study the Histo morphological patterns of colonic mucosal biopsies and correlate with clinical findings. Specimens were obtained from terminal ileum, colon and rectum, in inflammatory and neoplastic disorders. The histo morphological findings of each lesion was worked up for chronic diarrhea

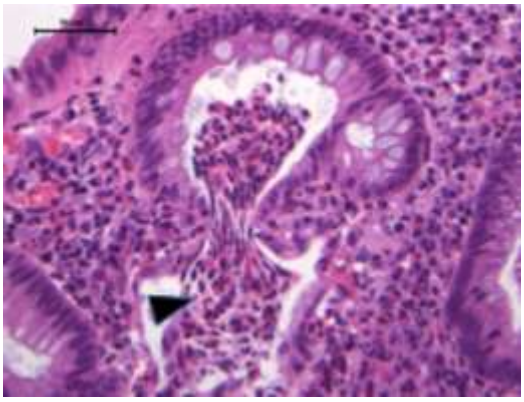

Image no 1: Crypt abscess

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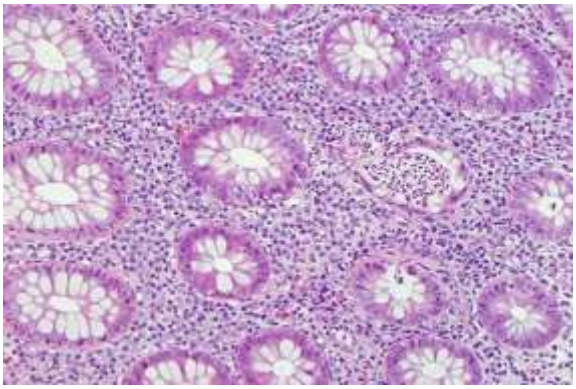

Image no 2: Histopathology slide of the colon showing active cryptitis and crypt abscess

AIM & OBJECTIVE

1. Study Histo morphological study of colonoscopic biopsies in patients presenting with chronic diarrhea
2. Study incidence of pathological causes of chronic diarrhea.

MATERIAL AND METHODS

Study design: Prospective Study.

Study setting: Department of Pathology, Dr. D.Y Patil Medical College and Research Institute, Kolhapur.

Study duration: From September 2022 to September 2023

Study population: A total of 100 colonoscopic biopsies from the patients who presented with chronic diarrhea attending Department of Pathology, Dr. D.Y Patil Medical College and Research Institute, Kolhapur.

Sample size: 100

Inclusion criteria:

1. All colonoscopic biopsies from the patients presenting with chronic diarrhea

Exclusion Criteria

1. Not willing to participate
2. Patients with recent history of antibiotic use (< 2 weeks),
3. HIV, Familial polyposis syndrome
4. Patients undergoing follow up colonoscopies for inflammatory bowel disease (IBD), Prior bowel surgery.

Approval for the study:

Written approval from Institutional Ethics committee was obtained beforehand. Written approval of Pathology department was obtained. All chronic diarrhea cases attended Department of pathology for colonoscopic biopsies in Dr. D.Y Patil Medical College and Research Institute, Kolhapur during

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study period such cases were included in the study. After obtaining informed verbal consent from all study participants such cases were included in the study.

Sample size: 100

Study procedure:

A total of 100 colonoscopic biopsies from the patients who presented with chronic diarrhea attending pathology department were studied. During the procedure, gross pathology was noted and biopsies were taken from representative areas. Relevant clinical details and colonoscopic findings were taken for the study. The Histological diagnosis was given after the studying the haematoxylin and eosin (H&E) stained section. Special stain like Ziehl-Neelsen (ZN) was done to identify acid fast bacilli, to confirm the diagnosis of tuberculoses colitis.

Data Analysis:

Data was analyzed and presented in frequency tables and graphs using Microsoft word and Excel. Chi-square test was applied to test statistical significance wherever necessary. Significance is assessed at 5% level of significance.

RESULT AND OBSERVATIONS

This prospective study was conducted among 100 patients delivered in Department of Obstetrics and Gynaecology, Dr. D.Y Patil Medical College and Research Institute, Kolhapur during study period.

Table No.1: Distribution of cases as per age (n=100)

Age (in Years)	Frequency	Percentage
18-30	10	10%
31-50	37	37%
51-70	30	30%
Above 70	23	20%
Total	100	100%

Table and figure no 1 shows that, majority of cases were from 31-50 years age group e.g. 37 followed by 30 cases in 51-70 years age group,23 cases in above 70 years and 10 cases found in 18-30 years age group.

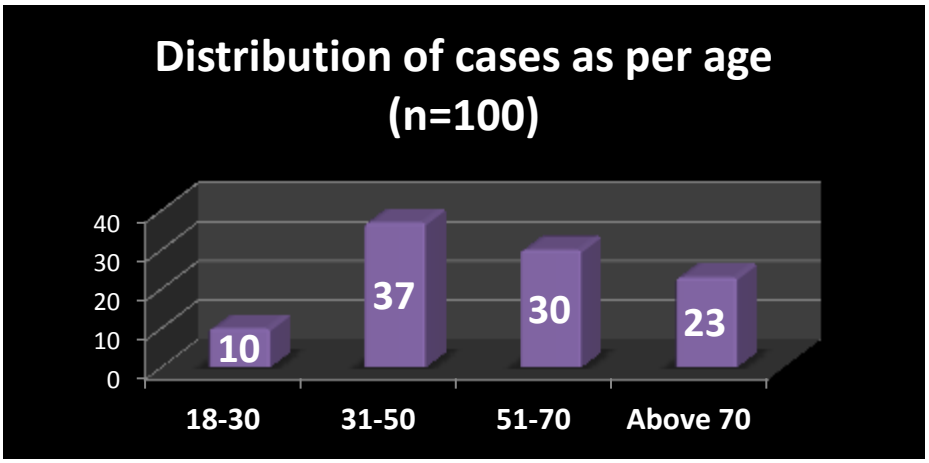

Figure No.1: Distribution of cases as per age (n=100)

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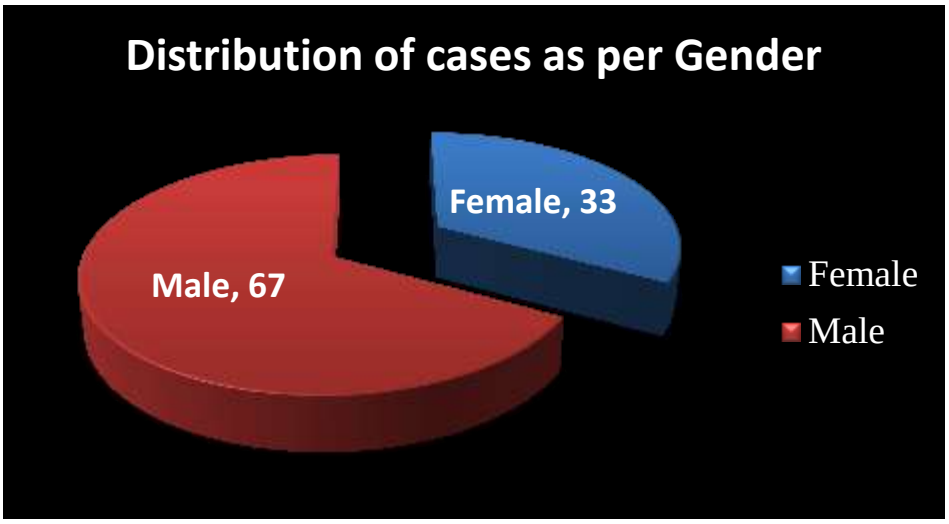

Figure no: 2 Distribution of cases as per Gender

Above figure shows that, most of the cases were Males contributing 67% and 33% were females.

Table No.2: Distribution of cases as per Clinical features (n=100)

Clinical features	Frequency	Percentage
Diarrhea	100	100%
Pain abdomen	40	14%
Weight loss	17	10%
Fatigue	10	2%

Table no: 2 and figure no: 3 shows all cases presented with Diarrhea and associated with pain in abdomen 40 cases, 17 cases reported weight loss and 10 cases with fatigue.

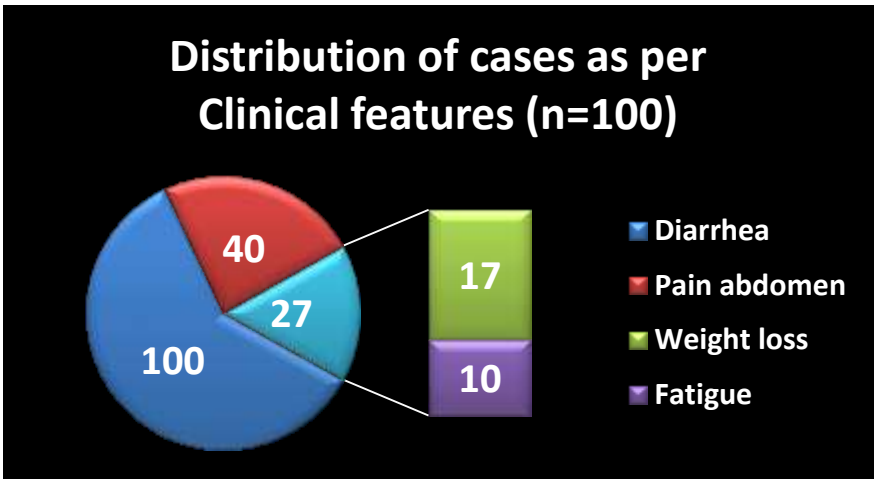

Figure No.3: Distribution of cases as per Clinical features (n=100)

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Table No.3: Histomorphological findings (n=100)

Histomorphological findings	Frequency	Percentage
Architectural distortion	15	15%
Ulceration	55	55%
Cryptitis	26	26%
Crypt abscess	22	22%
Neutrophilic infiltrates	39	39%
Lymphoplasmacytic infiltration	10	10%
Submucosal infiltration	09	09%
Submucosal edema	18	18%
Granulomas	12	12%

Table no 3 and figure no 4 shows most of cases found with Ulceration 55 followed by Neutrophilic infiltrates 39, Cryptitis 26, Crypt abscess 22, Submucosal edema 18, Architectural distortion 15, Granulomas 12 and 10 cases found with Lymphoplasmacytic infiltration

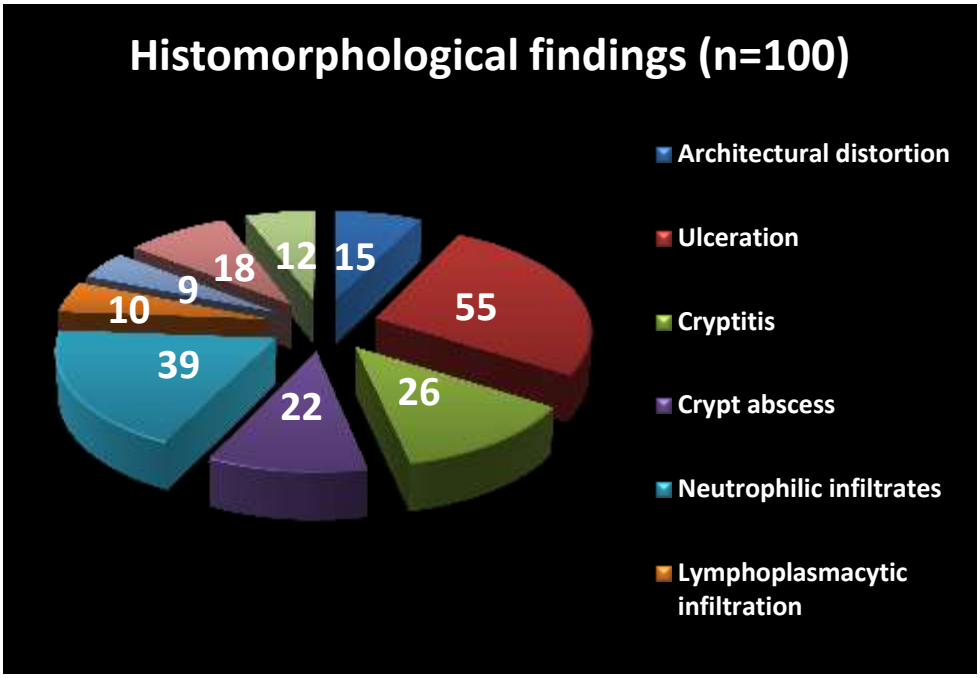

Figure No.4: Histomorphological findings (n=100)

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Table No.4: Distribution of cases as per Histopathological diagnosis (n=100)

Clinical features	Frequency	Percentage
Non specific colitis	34	34%
Active & chronic colitis	30	30%
Tuberculous colitis	11	11%
Ulcerative colitis	11	11%
Polyps	02	2%
Crohn's disease	05	5%
Lymphocytic colitis	02	2%
Neoplasia	04	4%
Melanosis coli	01	1%

Table no: 4 and figure no: 5 shows majority of cases diagnosed with non specific colitis 34 followed by active and chronic colitis 30 cases, tuberculous colitis 11, ulcerative colitis 11,crohns disease 5, neoplasia 4, polyps 2, lymphocytic colitis 2 and 1 cases diagnosed with melanosis coli.

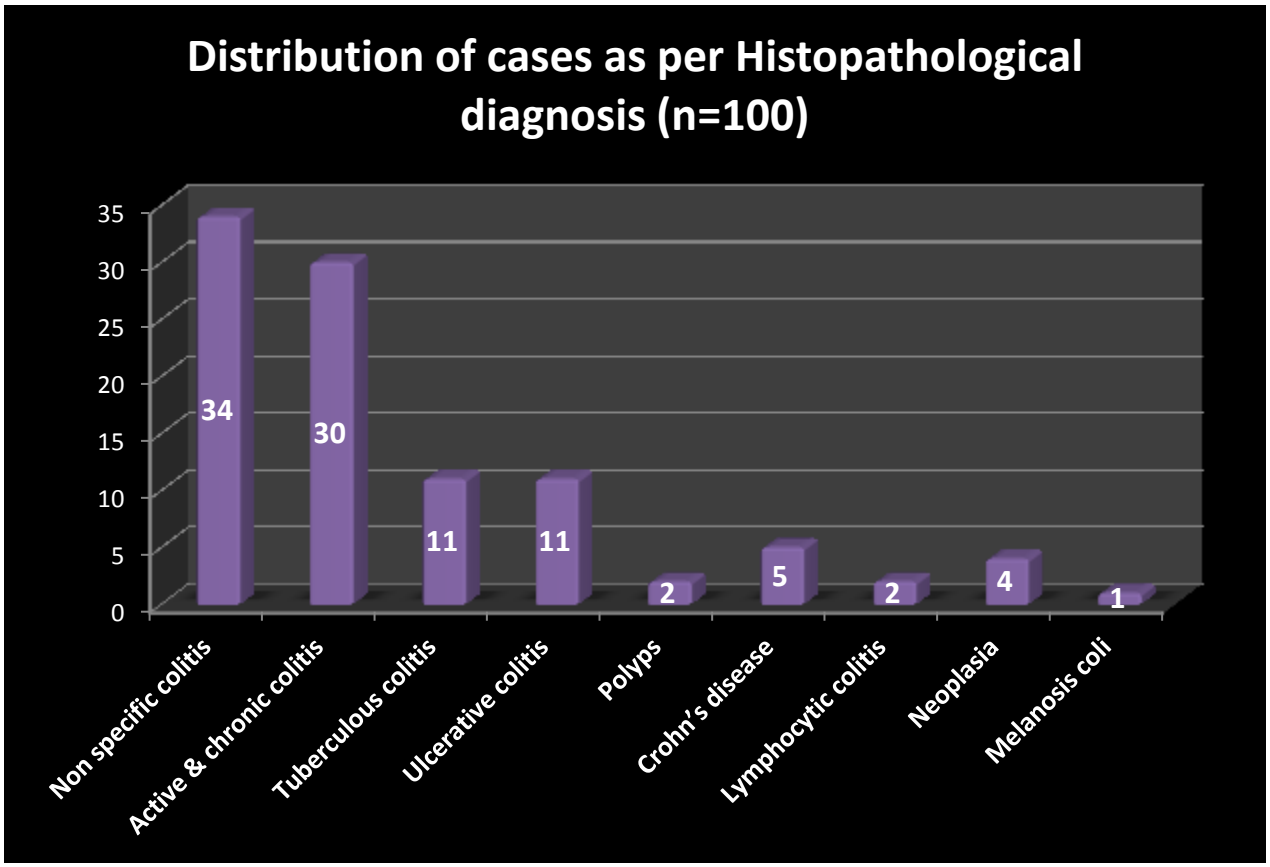

Figure No.5: Distribution of cases as per Histopathological diagnosis (n=100)

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DISCUSSION

This prospective study was conducted among 100 cases at Department of Pathology Dr. D.Y Patil Medical College and Research Institute, Kolhapur. During study period From September 2022 to September 2023.

In current study majority of cases were from 31-50 years age group e.g. 37 followed by 30 cases in 51-70 years age group,23 cases in above 70 years and 10 cases found in 18-30 years age group. similar finding observed in the study conducted by Shah et al [11]. This observation indicates that colonoscopy is a safe procedure done in all age groups and can be biopsied for further evaluation

In current study most of the cases were Males contributing 67% and 33% were females. Similar finding observed in the study conducted by Kabbur RR et al [13] he reported that the majority of cases were males 77% and 23% females.

Present study shows all cases presented with Diarrhea and associated with pain in abdomen 40 cases, 17 cases reported weight loss and 10 cases with fatigue. Similar finding observed in the study conducted by Kabbur RR et al [13] he reported that the 100 cases presented with the symptom of diarrhoea (seen in 100% of patients) and with other associated features like pain abdomen (37%), weight loss (8%), fatigue (24%).

In current study Histomorphological findings most of cases found with Ulceration 55 followed by Neutrophilic infiltrates 39, Cryptitis 26, Crypt abscess 22, Submucosal edema 18, Architectural distortion 15, Granulomas 12 and 10 cases found with Lymphoplasmacytic infiltration. Contrast result observed in the study conducted by Shah et al [11] he reported that the 60% cases finding was normal mucosa as compared with in our study 100% cases presented with abnormal mucosa. Another study done by Villafuerte-Galvez J et al [3] he reported that the 15% cases diagnosed with abnormal mucosa. Similar finding observed in the study conducted by Kabbur RR et al [13] he reported that the 100% cases with abnormal mucosa.

In current study majority of cases diagnosed with non specific colitis 34 followed by active and chronic colitis 30 cases, tuberculous colitis 11, ulcerative colitis 11,crohns disease 5, neoplasia 4, polyps 2, lymphocytic colitis 2 and 1 cases diagnosed with melanosis coli. Similar result observed in the study conducted by Shah et al [11] he reported that the 8.9% cases diagnosed with non specific colitis. Similar finding observed in the study conducted by Kabbur RR et al [13] he reported that the 29% cases diagnosed with non specific colitis and 21% cases with active and chronic colitis,

CONCLUSION

Endoscopic evaluation of the large bowel has been greatly enhanced by the availability of flexible colonoscopies. A greater awareness of the disease and understanding of pathogenesis on the part of the pathologist was felt to be necessary for a better and relevant reported diagnosis. Hence, colonoscopic biopsies have increased the role of pathologists in the diagnosis and management of patients with chronic diarrhea so that proper clinico-pathological correlation can be made to assess severity and to guide treatment accordingly

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