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Clinical Profile and Colonoscopic Findings in Patients Presented with Lower Gastrointestinal Bleeding

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Abstract | **Original Research Article**

Background: Lower gastrointestinal bleeding (LGIB) is a frequent cause of hospitalisation worldwide, but data from Bangladesh are limited. Colonoscopy provides both diagnostic and therapeutic benefit in this setting. ***Methods:*** We conducted a retrospective observational study of 100 consecutive patients with LGIB at Popular Diagnostic Centre, Medinova Medical Services and Labaid Diagnostic, Barishal, Bangladesh from January to December 2023, over one year. Demographic, clinical, laboratory, colonoscopic, and outcome data were collected. Statistical analysis included Chi-square/Fisher's exact test, t-test/ANOVA, and exploratory logistic regression for predictors of significant pathology (carcinoma, polyps, colitis). ***Results:*** The mean age was 53.0 ± 13.5 years; 58% were male. Haematochezia (41%) was the most common presentation, and mean haemoglobin was 9.9 g/dL. Colonoscopy showed haemorrhoids in 39%, colorectal carcinoma in 23%, diverticulosis in 15%, colitis in 10%, polyps in 8%, and angiodysplasia in 5%. All angiodysplasia cases required intervention; endoscopic therapy was also frequent in haemorrhoids (62%) and carcinoma (74%). Overall, 80% of patients stabilised with medical or endoscopic therapy, 15% required surgery (mainly in diverticulosis, colitis, carcinoma), and mortality was 1%, confined to advanced carcinoma. Logistic regression did not identify significant predictors of pathology, though trends suggested lower odds among males and higher odds with increasing haemoglobin. ***Conclusion:*** In this Bangladeshi tertiary cohort, haemorrhoids were the leading cause of LGIB, with carcinoma forming a substantial minority. Most patients stabilised without surgery, and mortality was confined to one carcinoma case. These findings underscore the importance of colonoscopy for both diagnosis and treatment, and highlight the need for larger multicentre studies to refine risk stratification.

Keywords: Lower Gastrointestinal Bleeding, Colonoscopy, Haemorrhoids, Colorectal Carcinoma, Bangladesh.

INTRODUCTION

Lower gastrointestinal bleeding (LGIB) is a common yet potentially life-threatening clinical presentation encountered in emergency and inpatient settings. It encompasses bleeding originating distal to the ligament of Treitz and may present with haematochezia, melaena, or occult blood loss [1]. The burden of LGIB varies across regions, with increasing incidence reported globally due to ageing populations and higher prevalence of comorbidities such as diverticular disease, colorectal carcinoma, and vascular malformations [2,3].

Colonoscopy remains the gold standard for the diagnosis and management of LGIB, as it allows both visualisation of the colonic mucosa and therapeutic intervention when required [4]. Several studies have demonstrated its diagnostic yield in identifying haemorrhoids, diverticulosis, inflammatory bowel disease, neoplastic lesions, and angiodysplasia as common causes of LGIB [1,2,5]. Despite its widespread use, the diagnostic spectrum and clinical profile of patients with LGIB vary considerably depending on geographical location, dietary habits, and healthcare access [6].

In South Asian and resource-limited settings, the presentation is often delayed, and patients may already be anaemic at the time of colonoscopy [3,5]. Furthermore, regional data from Nepal and India have highlighted haemorrhoids and colorectal carcinoma as important contributors to LGIB, with differences in age

distribution and gender predominance compared with Western series [1,2,4,5]. Similarly, experience from African centres suggests a rising burden of neoplastic causes alongside benign anorectal disease [6]. These variations underscore the importance of context-specific studies to better understand the clinical presentation and colonoscopic findings of patients presenting with LGIB.

Bangladesh, with its large and diverse population, lacks comprehensive data on the clinical spectrum of LGIB and the colonoscopic yield in this group of patients. Understanding the demographic distribution, clinical presentation, and colonoscopic diagnoses in this setting is essential for improving early recognition, guiding treatment, and informing preventive strategies.

OBJECTIVES

Primary Objective:

- To describe the clinical profile and colonoscopic findings of patients presenting with lower gastrointestinal bleeding.

SECONDARY OBJECTIVES:

- To identify the common aetiologies of LGIB in this cohort.
- To explore associations between clinical features (e.g., age, sex, comorbidities, haemoglobin levels) and colonoscopic diagnoses.
- To provide a regional perspective for comparison with other South Asian and international studies.

METHODS

Study Design and Setting

This study was designed as a retrospective observational analysis conducted at Popular Diagnostic Centre, Medinova Medical Services and Labaid Diagnostic, Barishal, Bangladesh from January to December 2023. The centres provides advanced endoscopic and surgical services, catering to a wide catchment area of both urban and rural populations. The study was carried out over a defined one-year period and included 100 consecutive patients who presented with features of lower gastrointestinal bleeding (LGIB) and underwent colonoscopy as part of their diagnostic evaluation.

Inclusion criteria were:

- Patients aged ≥18 years presenting with LGIB, defined as haematochezia, per-rectal bleeding, melaena with suspected lower gastrointestinal source, or iron deficiency anaemia attributed to colonic pathology.
- Patients who underwent complete colonoscopy with documented findings.

Exclusion criteria were:

- Patients with an upper gastrointestinal source of bleeding confirmed on esophagogastroduodenoscopy (e.g., peptic ulcer, variceal haemorrhage).
- Incomplete or inadequate colonoscopy (e.g., poor bowel preparation, incomplete visualisation of caecum).
- Patients with incomplete clinical or laboratory data.

DATA COLLECTION

Demographic and clinical variables recorded included age, sex, presenting symptom, and haemoglobin concentration at admission. Comorbidities were noted, including hypertension, diabetes mellitus, chronic liver disease, and chronic kidney disease. Colonoscopy findings were categorised into haemorrhoids, diverticulosis, colorectal carcinoma, colonic polyps, colitis (infective or inflammatory bowel disease), angiodysplasia, and normal colonoscopy.

For each patient, documentation was made of whether an endoscopic intervention was performed (e.g., polypectomy, haemorrhoid banding, haemostasis for angiodysplasia). Clinical outcomes were classified as stabilised on medical/endoscopic management, surgery required, or mortality during admission.

STATISTICAL ANALYSIS

Data were entered into a secured database and analysed using IBM SPSS Statistics for Windows, version 26.0 (IBM Corp., Armonk, NY, USA). Continuous variables were tested for normality and summarised as mean ± standard deviation (SD) or median with interquartile range (IQR), as appropriate. Categorical variables were expressed as frequencies and percentages. Comparisons between groups (e.g., colonoscopy findings by age or sex) were performed using the Chi-square test or Fisher's exact test for categorical variables, and the independent t-test or one-way ANOVA for continuous variables. Logistic regression analysis was applied to determine independent predictors of significant colonoscopic findings (neoplasia, polyps, colitis vs benign causes such as haemorrhoids/diverticulosis). A p-value <0.05 was considered statistically significant.

RESULTS

1. Baseline Characteristics

A total of 100 patients presenting with lower gastrointestinal bleeding were included in the study. The mean age was 53.0 ± 13.5 years (range: 20–82 years). Males accounted for a slight majority (58%), resulting in a male-to-female ratio of approximately 1.4:1. Haematochezia was the most frequent presenting symptom, reported in 41% of patients, followed by melaena (26%) and per-rectal bleeding (23%). A smaller proportion (10%) presented primarily with symptoms of anaemia. The mean haemoglobin concentration at presentation was 9.9 ± 2.1 g/dL (range: 5.0–15.6 g/dL), reflecting the presence of moderate anaemia in most cases. Regarding comorbidities, 40% of patients had

none, while the most common coexisting conditions were hypertension (21%) and diabetes mellitus (14%). Chronic liver disease and chronic kidney disease were documented in 10% and 5% respectively, whereas 10% of patients had multiple comorbid conditions.

Table 1: Baseline demographic and clinical characteristics of patients with lower gastrointestinal bleeding (n = 100)

Characteristic	Value
Age (years), mean ± SD (range)	53.0 ± 13.5 (20–82)
Sex	Male: 58 (58.0%) Female: 42 (42.0%)
Presenting symptom	Haematochezia: 41 (41.0%) Melaena: 26 (26.0%) Per-rectal bleeding: 23 (23.0%) Anaemia symptoms: 10 (10.0%)
Haemoglobin (g/dL), mean ± SD (range)	9.9 ± 2.1 (5.0–15.6)
Comorbidities	None: 40 (40.0%) Hypertension: 21 (21.0%) Diabetes: 14 (14.0%) Liver disease: 10 (10.0%) CKD: 5 (5.0%) Multiple: 10 (10.0%)

2. Colonoscopic Findings

On colonoscopy, haemorrhoids were the most common finding, observed in 39% of patients. Colorectal carcinoma accounted for 23%, while diverticulosis was noted in 15%. Colitis, including both infective and inflammatory causes, was found in 10%, and colonic polyps in 8% and Angiodysplasia in 5%. No cases of entirely normal colonoscopy were recorded in this cohort.

The distribution of findings is summarised in Table 2. A bar chart (Figure 1) provides a visual representation of the relative frequencies.

Table 2: Colonoscopic findings in patients with lower gastrointestinal bleeding (n = 100)

Colonoscopy Finding	n	%
Haemorrhoids	39	39.0%
Colorectal carcinoma	23	23.0%
Diverticulosis	15	15.0%
Colitis (infective/IBD)	10	10.0%
Polyps	8	8.0%
Angiodysplasia	5	5.0%
Normal colonoscopy	0	0.0%

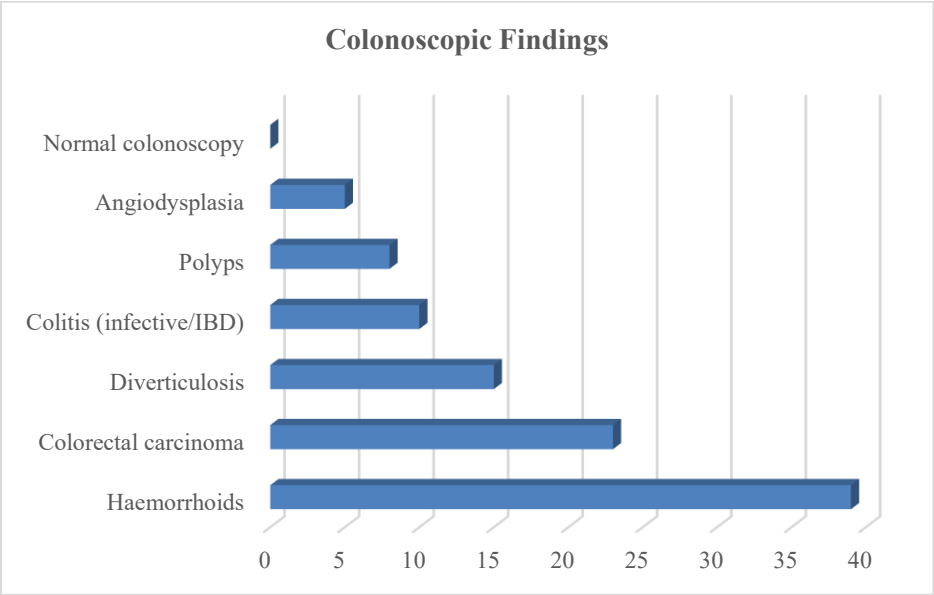

Figure 1: Distribution of colonoscopic findings among patients presenting with lower gastrointestinal bleeding (n = 100)

3. Correlation of Clinical Profile with Colonoscopic Findings

The mean age varied across diagnostic categories, with patients presenting with haemorrhoids being older on average (57.2 ± 12.7 years) compared to those with diverticulosis (44.9 ± 11.4 years). Patients diagnosed with colorectal carcinoma had a mean age of 50.6 ± 12.7 years, while those with colitis and angiodysplasia presented at approximately 52 years.

Haemoglobin levels were generally reduced across all groups, ranging from 9.6 g/dL in diverticulosis to 10.6 g/dL in colorectal carcinoma, consistent with anaemia due to chronic or acute blood loss.

Males predominated in most diagnostic categories, particularly in colitis (70% male) and angiodysplasia (100% male, though with small numbers). In contrast, the sex distribution among colorectal carcinoma patients was more balanced (male-to-female ratio ~1:1).

Comorbidities were common across groups, with 70–74% of patients with carcinoma, colitis, or diverticulosis having at least one comorbidity. In haemorrhoidal disease, comorbidities were present in 69.2% of patients.

Table 3: Correlation of clinical profile with colonoscopic findings

Colonoscopy Finding	Mean Age (±SD)	Mean Hb (±SD)	Male n (%)	Female n (%)	Any Comorbidity n (%)
Haemorrhoids	57.2 ± 12.7	10.0 ± 1.6	24 (61.5%)	15 (38.5%)	27 (69.2%)
Diverticulosis	44.9 ± 11.4	9.6 ± 1.8	8 (53.3%)	7 (46.7%)	11 (73.3%)
Colorectal carcinoma	50.6 ± 12.7	10.6 ± 2.1	11 (47.8%)	12 (52.2%)	17 (73.9%)
Colitis (infective/IBD)	52.4 ± 12.8	9.9 ± 1.9	7 (70.0%)	3 (30.0%)	7 (70.0%)
Angiodysplasia	52.8 ± 15.1	9.7 ± 0.9	5 (100.0%)	0 (0.0%)	2 (50.0%)

4. Interventions and Immediate Outcomes

Endoscopic interventions were performed most frequently in patients with haemorrhoids (61.5%) and colorectal carcinoma (73.9%). All patients with angiodysplasia underwent intervention, although only half stabilised while the remainder proceeded to surgery. By contrast, no interventions were undertaken in patients with diverticulosis or colitis.

The majority of patients (80%) were stabilised with medical or endoscopic management. Surgery was required in 7% of haemorrhoids, 27% of diverticulosis, 26% of colitis, and 26% of carcinoma cases. Overall mortality was 1%, confined to a single patient with advanced colorectal carcinoma.

Table 4: Intervention and outcomes by colonoscopic findings (n = 100)

Colonoscopy Finding	Intervention Yes	Intervention No	Stabilised	Surgery required	Mortality
Haemorrhoids	24	15	32	7	0
Diverticulosis	0	15	11	4	0
Colorectal carcinoma	17	6	16	6	1
Colitis (infective/IBD)	0	10	7	3	0
Angiodysplasia	5	0	3	2	0

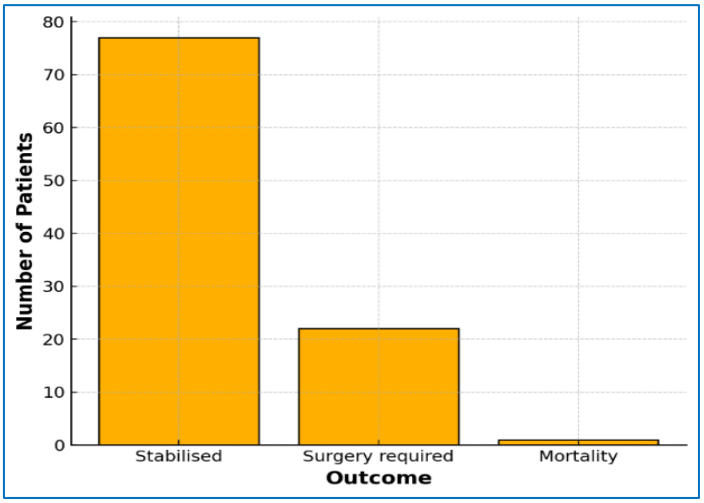

Figure 2: Overall clinical outcomes of patients with lower gastrointestinal bleeding (n = 100)

5. Exploratory Risk Factor Analysis

For hypothesis generation, a logistic regression model was constructed with the binary outcome significant colonoscopic pathology (colorectal carcinoma, polyps, or colitis) versus benign/normal findings (haemorrhoids, diverticulosis, angiodysplasia, normal). Among 100 patients, 41 (41%) had significant pathology.

Univariate models and a multivariable model (covariates: age, sex, haemoglobin, any comorbidity) were fitted. In the adjusted model, no covariate reached statistical significance; however, point estimates suggested lower odds among males and slightly higher odds with increasing haemoglobin, with wide confidence intervals consistent with the exploratory nature of the analysis.

Table 5: Exploratory logistic regression for predictors of significant colonoscopic pathology (n = 100; events = 41)

Predictor	OR	95% CI	p-value	aOR	95% CI (adjusted)	p-value (adjusted)
Age (per year)	0.99	0.96–1.02	0.525	0.99	0.96–1.02	0.493
Male (vs Female)	0.62	0.28–1.40	0.253	0.60	0.26–1.36	0.220
Haemoglobin (per g/dL)	1.13	0.89–1.42	0.314	1.14	0.90–1.45	0.282
Any comorbidity (vs none)	1.06	0.44–2.54	0.894	1.06	0.43–2.62	0.902

Notes: Outcome coded as 1 = carcinoma/polyps/colitis; 0 =haemorrhoids/diverticulosis/angiodysplasia/normal. Estimates presented as odds ratios (OR) with 95% confidence intervals (CI). Models specified a priori; results are exploratory and hypothesis-generating.

DISCUSSION

In this single-centre Bangladeshi cohort, haemorrhoids were the leading colonoscopic diagnosis (39%), followed by colorectal carcinoma (23%) and diverticulosis (15%), with low rates of normal examinations (1%). These proportions align with regional experiences from neighbouring India. Dar *et al.,* 2015 reported haemorrhoids and diverticular disease among the most frequent causes of lower gastrointestinal bleeding (LGIB) in a tertiary Indian centre, with malignancy contributing a substantial minority—patterns broadly comparable to our distribution [7].

Age-related differences in aetiology have been noted in Africa; Oluyemi *et al.,* 2020 showed that older adults had higher rates of diverticular disease and neoplasia on colonoscopy in Lagos, whereas younger adults more commonly had benign anorectal disease [8]. Our data echo this clinical gradient descriptively (older age in haemorrhoids and carcinoma groups), although the exploratory regression did not demonstrate statistically significant age effects, likely reflecting modest power.

Populations dominated by children predictably diverge from adult patterns. Sharma *et al.,* 2018 found juvenile polyps and colitis to dominate paediatric LGIB in North India, underscoring that aetiological spectra vary sharply by age band [9]. Our adult cohort therefore appropriately shows a higher burden of haemorrhoids, neoplasia, and diverticulosis.

Findings from South Asia often emphasise benign anorectal disease alongside a non-trivial malignant signal. Zia *et al.,* 2021 (Pakistan) observed haemorrhoids as a common finding with meaningful detection of carcinoma, consistent with our proportions, and highlighted the diagnostic yield of colonoscopy in resource-limited settings [10]. Similarly, Pati *et al.,* 2016 from coastal eastern India described a spectrum inclusive of haemorrhoids, diverticulosis, and neoplasia, suggesting shared regional epidemiology with our centre in Dhaka [11]. From Nepal, Bhattarai *et al.,* 2020 reported haemorrhoids and colitis prominently, with anaemia common at presentation—again mirroring our cohort's moderate anaemia at baseline [12]. In another Indian cross-sectional series, Hajare & Kantamaneni, 2018 underscored haemorrhoids and inflammatory colitides among frequent causes, reinforcing the predominance of benign aetiologies punctuated by malignant disease in tertiary practice [13].

Regarding timing and performance of colonoscopy, Roshan Afshar *et al.,* 2018 synthesised evidence suggesting that early colonoscopy in acute LGIB may shorten length of stay and increase therapeutic yield, although effects on hard outcomes remain uncertain [14]. Our high stabilisation rate (80%) and concentration of endoscopic therapy in haemorrhoids, carcinoma, and angiodysplasia are consistent with a pragmatic therapeutic role; however, we did not evaluate colonoscopy timing, precluding direct comparison with early-versus-delayed strategies. Current practice standards further contextualise these choices: the ESGE Guideline (Triantafyllou *et al.,* 2021) recommends early colonoscopy in ongoing bleeding after resuscitation and adequate preparation, while emphasising targeted endoscopic haemostasis when a culprit lesion is identified [15]. Our pattern of selective intervention (banding/polypectomy/haemostasis) accords with these recommendations, within the operational constraints of a busy public hospital.

Broader pathophysiological and organisational considerations are also pertinent. Barnert & Messmann, 2009 emphasised structured resuscitation, risk stratification, and the complementary roles of imaging and endoscopy in LGIB, noting that outcomes depend as much on systems of care as on lesion type [16]. Although focused on upper GI haemorrhage, Raj *et al.,* 2023 highlighted the value of early triage and protocolised

management in emergency settings—principles that translate to LGIB pathways and likely contribute to the low mortality we observed [17].

Our exploratory risk-factor modelling did not identify independent predictors of "significant pathology" (carcinoma/polyps/colitis). This contrasts with age-stratified signals reported by Oluyemi et al. and malignancy-associated profiles noted by Dar et al. [7,8]. The discrepancy plausibly reflects sample size and event constraints (events-per-variable) and residual confounding—limitations also acknowledged in prior observational series [7–13]. From a clinical standpoint, these null adjusted associations reinforce the importance of comprehensive colonoscopic evaluation across demographic subgroups rather than relying on limited bedside predictors.

Strengths and Limitations

A key strength of this study is the inclusion of consecutive patients presenting with LGIB in a large tertiary referral centre, ensuring a representative spectrum of cases. Colonoscopic findings were systematically categorised, and outcomes were clearly documented, allowing meaningful comparison across diagnostic groups. The study also provides much-needed data from Bangladesh, where the published evidence on LGIB remains sparse.

However, certain limitations must be acknowledged. First, this was a single-centre study with a relatively modest sample size, which restricts the statistical power to detect predictors of significant pathology and limits generalisability. Second, colonoscopy timing and details of pre-procedural optimisation, such as transfusion or anticoagulation status, were not systematically captured, which may influence diagnostic yield and outcomes. Third, the analysis was confined to in-hospital outcomes without longer-term follow-up, precluding assessment of recurrent bleeding or delayed complications. Finally, although regression modelling was undertaken, the results should be considered exploratory given the event numbers and study design.

Implications and future directions

In a South Asian tertiary context, haemorrhoids remain the commonest colonoscopic finding, while colorectal carcinoma constitutes a substantial minority—supporting diligent evaluation of all LGIB presentations. Selective endoscopic therapy appears effective for stabilisation, but system-level adoption of guideline-concordant pathways (including early colonoscopy where feasible) could further optimise care, as suggested by meta-analytic and guideline evidence [14,15]. Future multicentre studies with larger samples, explicit timing of colonoscopy, antithrombotic exposure, and longer-term outcomes are warranted to refine risk prediction and benchmark care in the region.

Conclusion

In this cohort of patients presenting with lower gastrointestinal bleeding at a tertiary referral centre in Bangladesh, haemorrhoids were the most frequent colonoscopic diagnosis, followed by colorectal carcinoma and diverticulosis. Most patients were stabilised with medical or endoscopic therapy, with surgery required in a minority and overall mortality remaining low. The findings highlight the dual burden of benign anorectal disease and clinically significant neoplastic pathology in this setting, underscoring the importance of timely colonoscopy for diagnosis and management. Larger multicentre studies with longitudinal follow-up are warranted to refine risk stratification and guide optimal care pathways for this common and heterogeneous clinical problem.

References

1. Chaudhary, S., Khatri, P., Dhakal, P. R., Shahi, A., & Jaiswal, N. K. (2019). Clinical profile and colonoscopic findings in patients presented with lower gastrointestinal bleeding. Age (yrs), 20(4), 5-79.
2. Shahi, A., Shrestha, S., Chaudhary, S., Dhakal, P. R., & Shah, A. (2021). Clinical profile and colonoscopic findings in patients presented with lower gastrointestinal bleeding in UCMS. Journal of Universal College of Medical Sciences, 9(01), 13-17.
3. Sinharay, K. (2017). Clinical profile of patients presenting with gastrointestinal bleeding in a tertiary care hospital. International Journal of Advances in Medicine.
4. Jain, M. K., Pandey, V., Singh, S., Gupta, G., & Pokharna, R. K. (2025). Etiological Spectrum and Clinical Profile of Lower Gastrointestinal Bleed in a Tertiary Care Center: A Retrospective Analysis. Journal of Digestive Endoscopy.
5. Soni, A. (2021). Etiological Profile of Patients with Lower Gastrointestinal Bleed Undergoing Colonoscopy in a Tertiary Care Center. JK Science: Journal of Medical Education & Research, 23(1), 38-42.
6. Sibomana, I., I. D. Karenzi, I. Niyongombwa, V. Dusabejambo, and A. Kiswezi. "Lower gastrointestinal bleeding at a referral hospital in Kigali, Rwanda: Clinical, colonoscopic, and pathologic profiles." East and Central African Journal of Surgery 24, no. 2 (2019): 101-104.
7. Dar, I. A., Dar, W. R., Khan, M. A., Kasana, B. A., Sofi, N. U., Hussain, M., ... & Sodhi, J. S. (2015). Etiology, clinical presentation, diagnosis and management of lower gastrointestinal bleed in a Tertiary Care Hospital in India: A retro-prospective study. Journal of Digestive Endoscopy, 6(03), 101-109.
8. Oluyemi, A., Odeghe, E., & Adeniyi, O. (2020). Colonoscopy findings in lower gastrointestinal bleeding in Lagos: A comparative study based on

age. Nigerian Journal of Clinical Practice, 23(12), 1656-1659.
9. Sharma, B., Sharma, R., Bodh, V., Sharma, S., Sood, A., Sharma, R., & Sharma, N. (2018). Chronic Lower Gastrointestinal Bleeding: Etiological Profile and Role of Colonoscopy among Children from sub-Himalayan Ranges of North India. Journal of Digestive Endoscopy, 9(03), 109-113.
10. Zia, N., Alam, L., & Ashraf, N. (2021). Endoscopic finding in patients presenting with lower gastrointestinal bleed-A study from A developing country. Pakistan Armed Forces Medical Journal, (1), 215.
11. Pati, G. K., Panda, S., Parida, S., Narayan, J., Padhi, P. K., Parida, P., ... & Singh, S. P. (2016). Profile of colonoscopic findings in a tertiary care centre in coastal eastern india. Orissa Medical Journal, 36(1), 54-58.
12. Bhattarai, S., Acharya, R. R., Jwarchan, B., & Karki, D. (2020). Clinical profile and colonoscopic findings in patients with lower gastrointestinal haemorrhage: a descriptive cross-sectional study. Asian Journal of Medical Sciences, 11(4), 40-45.
13. Hajare, S., & Kantamaneni, R. (2018). Etiological profile of patients with lower gastrointestinal bleeding: A 1-year cross-sectional study. Archives of Medicine and Health Sciences, 6(2), 300-302.
14. Roshan Afshar, I., Sadr, M. S., Strate, L. L., Martel, M., Menard, C., & Barkun, A. N. (2018). The role of early colonoscopy in patients presenting with acute lower gastrointestinal bleeding: a systematic review and meta-analysis. Therapeutic Advances in Gastroenterology, 11, 1756283X18757184.
15. Triantafyllou, K., Gkolfakis, P., Gralnek, I. M., Oakland, K., Manes, G., Radaelli, F., ... & van Hooft, J. E. (2021). Diagnosis and management of acute lower gastrointestinal bleeding: European Society of Gastrointestinal Endoscopy (ESGE) Guideline. Endoscopy, 53(08), 850-868.
16. Barnert, J., & Messmann, H. (2009). Diagnosis and management of lower gastrointestinal bleeding. Nature Reviews Gastroenterology & Hepatology, 6(11), 637-646.
17. Raj, A., Kaeley, N., Prasad, H., Patnaik, I., Bahurupi, Y., Joshi, S., ... & Patel, S. (2023). Prospective observational study on clinical and epidemiological profile of adult patients presenting to the emergency department with suspected upper gastrointestinal bleed. BMC Emergency Medicine, 23(1), 107.