

# Clinical Spectrum And Diagnostic Yield Of Lower Gastrointestinal Endoscopy At A Tertiary Centre

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## Abstract

Lower gastrointestinal endoscopy is an accurate procedure in the workup and screening of patients with lower gastrointestinal symptoms. The clinical spectrum and diagnostic yield depends upon the indications for the procedure.

**Aim Of The Study:** The aim of this study was to evaluate the spectrum of clinical findings in lower gastrointestinal endoscopy at a tertiary centre and to evaluate its diagnostic yield.

**Materials And Method:** This retrospective study of findings of lower gastrointestinal endoscopy was conducted in the endoscopic unit of the Department of General Surgery, Himalayan Institute of Medical Sciences, a tertiary centre in the state of Uttarakhand, India, for a period of 12 months. Findings were analyzed for the diagnostic yield.

**Result:** Pathological findings were seen in 48% of cases.

**Conclusion:** Patients with indications of high diagnostic yield should be subjected to lower gastrointestinal endoscopy on a priority basis. To reduce negative diagnostic yield, guidelines should be followed while performing lower gastrointestinal endoscopy.

## INTRODUCTION

Lower gastrointestinal endoscopy is an accurate procedure in the workup and screening of patients with lower gastrointestinal symptoms, the demand of which has been increasing over the years, given the relative safety and the low complication rate associated with the procedure. It has been argued that colonoscopic screening is dangerous, expensive, and requires specialized skills. It has, therefore, been suggested that it should only be undertaken in those patients who will derive the most benefit, and that stricter selection criteria should be used to optimize a colonoscopic service.<sup>1,2,3</sup>

## AIM OF THE STUDY

The aim of this study was to evaluate the spectrum of clinical findings in lower gastrointestinal endoscopy at a tertiary centre and to evaluate its diagnostic yield.

## MATERIALS AND METHOD

This retrospective study was conducted in the endoscopic unit of the Department of General Surgery, Himalayan Institute of Medical Sciences, a tertiary centre in the state of Uttarakhand, India, for a period of 12 months. All the patients subjected to lower GI endoscopy during the period from August 1, 2007 to July 31, 2008 were included in this

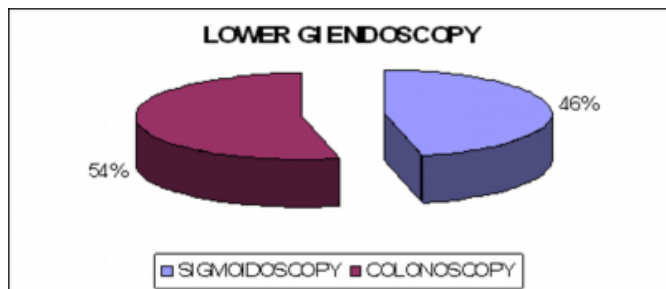
study, irrespective of the indication for which the investigation was conducted. Both sigmoidoscopy and colonoscopy were included in the study and the findings were recorded and analyzed. Sigmoidoscopy was done to inspect the anorectum, sigmoid colon and descending colon up to hepatic flexure whereas colonoscopy studied the entire large bowel extending up to the terminal ileum. The final diagnosis was made after a histopathological evaluation.

## RESULTS

During this period of study, a total of 384 lower gastrointestinal endoscopies were performed in both sexes, out of which 179 were sigmoidoscopies and 205 were colonoscopies.

**Figure 1**

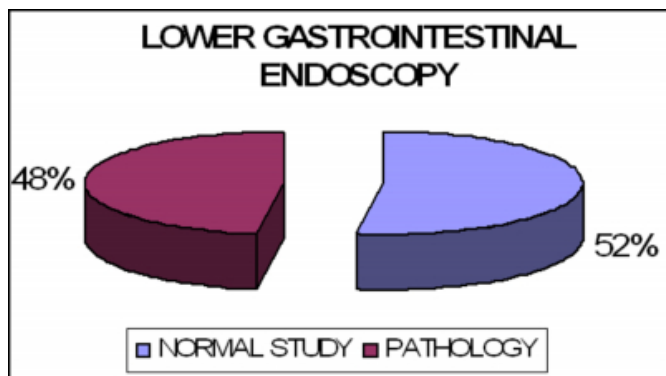
Figure 1



The age range of the patients was from 2 years to 80 years; 265 patients (69.1%) were male and 119 (30.9%) were female. Pathological findings were found in 184 cases (48%).

**Figure 2**

Figure 2



Ulcerative colitis was the most common pathology seen in lower gastrointestinal endoscopy, followed by internal hemorrhoids (TABLE 1).

**Figure 3**

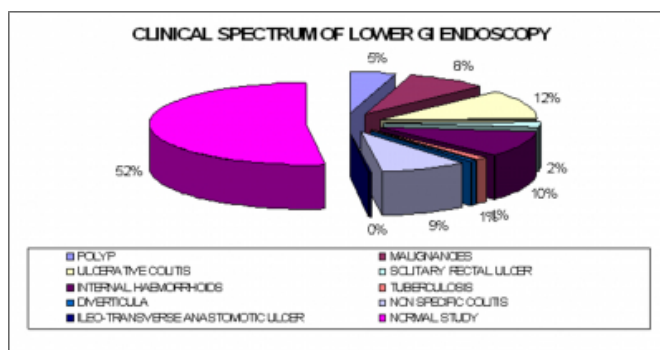
Table 1: Findings Of Lower GI Endoscopy

SL. NO.	FINDINGS	NO. OF CASES
1.	POLYP	18
2.	MALIGNANCIES	32
3.	ULCERATIVE COLITIS	45
4.	SOLITARY RECTAL ULCER	8
5.	INTERNAL HAEMORRHOIDS	39
6.	TUBERCULOSIS	5
7.	DIVERTICULA	2
8.	NON-SPECIFIC COLITIS	34
9.	ILEO-TRANSVERSE ANASTOMOTIC ULCER	1
10.	NORMAL STUDY	200

Non-specific colitis was seen in 9% of cases whereas malignancies of the lower gastrointestinal tract were detected in 8%; 52% of the lower gastrointestinal endoscopies were found to be normal studies. Rare findings detected in the study were tuberculosis of the gastrointestinal tract (commonly ileo-caecal, rarely of the ascending colon), diverticula, polyps, solitary rectal ulcer and ileotransverse anastomotic ulcer (FIG. 3).

**Figure 4**

Figure 3



## DISCUSSION

Lower gastrointestinal endoscopy enables visual inspection of the entire large bowel from the distal rectum to the caecum and sometimes extending up to the terminal ileum. The procedure is a safe and effective means of evaluating the large bowel. The technology for colonoscopy has evolved to provide a very clear image of the mucosa through a video camera attached to the end of the scope. The camera

connects to a computer, which can store and print color images selected during the procedure. Compared with other imaging modalities, endoscopy is especially useful in detecting small lesions such as adenomas; however, the main advantage of the procedure is that it allows for intervention, since biopsies can be taken and polyps removed.

Selection criteria are still a controversy regarding the indications of lower gastrointestinal endoscopy. Barium study (enema/double contrast) usually precedes the examination in some tertiary centers. No strict selection criteria were employed in our study of lower gastrointestinal endoscopy. <sup>1,2</sup>

Our study has shown a diagnostic yield of around 48%. In their evaluation of lower gastrointestinal endoscopy for a period of five years, Al-Shamali et al. had a diagnostic yield of 21%. The overall diagnostic yield was reported as 27.2% by Iqbal Siddique et al. The common indications of lower gastrointestinal endoscopic study are lower abdominal pain, lower gastrointestinal bleeding, diarrhea, iron deficiency anemia, mass lesions, polyps and surveillance. <sup>1,2,3,4,5,6,10</sup>

Ulcerative colitis was the most common finding in our study. In their evaluation of lower gastrointestinal endoscopy, Al-Shamali et al. also found ulcerative colitis as the most common finding. The incidence of malignancies of the colon is similar to the study done by Al-Shamali. Adenomatous polyps were the most common findings in the study by Iqbal Siddique. Non-specific colitis was detected in 9% in our patients, which was most commonly due to infective pathology. In our study, the definition of significant findings was based on certain positive results on colonoscopy. A normal colonoscopy was not considered significant, although this may be relevant to patient care as it may rule out a serious disease in the colon during surveillance. <sup>1,4,7,10,11</sup>

Lower gastrointestinal endoscopy is the investigation of choice in colonic pathology. The diagnostic yield depends upon the indications for the procedure. Studies have shown that the highest diagnostic yield is found in patients having lower gastrointestinal bleeding, mass lesions and polyps. Lower abdominal pain and surveillance yielded the least diagnostic pathology. Morini et al. have reported a diagnostic yield of 43% for “generally indicated” and 16% for “generally not indicated” categories. Charles reported that 40% of patients who have colonoscopy for an ASGE (1992 version) approved indication have a significant pathological finding compared to 22% of those who do not

meet the guidelines. De Bosset et al., using the Swiss criteria developed by the Rand Corporation/University of California at Los Angeles (RAND/UCLA) panel, have reported a diagnostic yield of 26% for patients who have colonoscopy for an appropriate or uncertain indication and 17% for those with an inappropriate indication. The colon was reported as completely normal in 82.6% of the patients in the “generally not indicated” and 73.9% in “not listed” groups, compared to 51.7% in the “generally indicated” group in the study by Iqbal Siddique et al. in 2005, who also further reported that the probability of finding a clinically significant lesion was significantly higher in patients aged ≥50 years (odds ratio = 1.6) and inpatients (odds ratio = 1.6). However, the indications and guidelines for performing lower gastrointestinal endoscopies were excluded in our study.

<sup>8,9,10,11,12,13</sup>

Patients with indications of high diagnostic yield should be subjected to lower gastrointestinal endoscopy on a priority basis. The probability of identifying a significant finding on colonoscopy is particularly higher when the indications for the procedure are judged to be appropriate by the guidelines, but a proportion of patients who undergo colonoscopy for an unlisted indication also have significant findings. However, to reduce a negative diagnostic yield, guidelines should be followed while performing lower gastrointestinal endoscopy.

<sup>8,10,11</sup>

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## **References**

1. Berkowitz I, Kaplan M. Indications for colonoscopy. An analysis based on indications and diagnostic yield. *S Afr Med J* 1993; 83:245-8.
2. Endoscopic Selection Committee of the British Society of Gastroenterology. Future requirements for colonoscopy in Britain. *Gut* 1987; 28:772-5.
3. Rex DK. Colonoscopy. *Gastrointest Endosc Clin North Am* 2000; 10:135-60.
4. Al-Shamali MA, Kalaoui M, Hasan F, Khajah A, Siddique I, Al-Nakeeb B. Colonoscopy: evaluating indications and diagnostic yield. *Ann Saudi Med*. 2001; 21:304-7.
5. Al-Nakeeb B, Jacob G, Liddawi H, et al. Fiberoptic colonoscopy: a report of findings in 481 patients from Kuwait. *Dis Col Rect* 1983; 26:236-8.
6. Isbister WM. Colonoscopy: a ten-year Wellington experience. *N Z Med J* 1987; 100:74-7.
7. Goenka MK, Kochhar R, Mehta SK. Spectrum of lower gastrointestinal hemorrhage: an endoscopic study of 166 patients. *Indian J Gastroenterol* 1993; 12:129-31.
8. Minoli G, Meucci G, Bortolli A, Garripoli, Leo P, Pera A,

et al. The ASGE guidelines for the appropriate use of colonoscopy in an open access system. *Gastrointest Endosc* 2000; 52:39-44.

9. Lasso A, Kilander A, Stotzer PO. Diagnostic yield of colonoscopy based on symptoms. *Scand J Gastroenterol* 2008; 43: 356-62.

10. Siddique I, Mohan K, Hasan F, Memon A, Patty I, Al-Nakib B. Appropriateness of indication and diagnostic yield of colonoscopy: First report based on the 2000 guidelines of the American Society for Gastrointestinal Endoscopy. *World J Gastroenterol* 2005; 11:7007-7003.

11. Morini S, Hassan C, Meucci G, Toldi A, Zullo A, Minoli G. Diagnostic yield of open access colonoscopy according to appropriateness. *Gastrointest Endosc* 2001; 54: 175-179.

12. De Bosset V, Froehlich F, Rey JP, Thorens J, Schneider C, Wietlisbach V, Vader JP, Burnand B, Muhlhaupt B, Fried M, Gonvers JJ. Do explicit appropriateness criteria enhance the diagnostic yield of colonoscopy? *Endoscopy* 2002; 34: 360-368.

13. Charles RJ, Chak A, Cooper GS, Wong RC, Sivak MV Jr. Use of open access in GI endoscopy at an academic medical center. *Gastrointest Endosc* 1999; 50: 480-485.

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