This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC 4.0). To view a copy of the license, visit **https://creativecommons.org/licenses/by-nc/4.0/**

Annals of Clinical and Analytical Medicine
Original Research

Analysis of one-year endoscopy data: a single center retrospective study

A single-center one-year endoscopy results

Abdulkadir Çelik[1], Arslan Hasan Kocamaz[2], Ömer Kişi[3], Berkan Acar[4], Elif Yılmaz[5]

[1] Department of General Surgery, Gaziantep Dr.Ersin Arslan Training and Research Hospital, Gaziantep, Türkiye.
[2] Clinic of General Surgery, Kayseri State Hospital, Kayseri, Türkiye.
[3] Department of General Surgery, School of Medicine, Necmettin Erbakan University, Konya, Türkiye.
[4] Department of General Surgery, School of Medicine, Giresun University, Giresun, Türkiye.
[5] Clinic of General Surgery, Gümüşhane Kelkit State Hospital, Gümüşhane, Türkiye.

Abstract

Aim: Endoscopy plays a crucial role in the diagnosis and treatment of gastrointestinal diseases. The prevalence and findings of endoscopic procedures vary across regions, making local data analysis essential for optimizing clinical approaches. This study retrospectively analyzes one year of endoscopic procedures performed in a single-center endoscopy unit, evaluating patient demographics, indications, findings, and complication rates.

Methods: We examined the records of upper and lower gastrointestinal endoscopies performed between January 1 and December 31, 2024, at Necmettin Erbakan University Meram Faculty of Medicine Hospital. Patient characteristics, procedure findings, pathology results, and complications were assessed.

Results: A total of 2,824 cases were included, with 1,965 undergoing upper gastrointestinal endoscopy and 859 undergoing colonoscopy. The most common findings in upper gastrointestinal endoscopy were gastritis (40.8%), hiatal hernia (13.4%), and esophagitis (10.6%), while the malignancy rate was 1.8%. Among colonoscopy cases, the malignancy rate was 4.7%, with polyps (17.9%) and hemorrhoidal disease (14.6%) being the most frequent non-malignant findings. Complications were minimal, with only one case of colonic perforation reported, and there was no mortality.

Conclusion: Our findings underscore the importance of endoscopy in gastrointestinal disease diagnosis, highlighting common pathologies and the low incidence of major complications. Future prospective multicenter studies are warranted to validate our results and further explore the diagnostic and therapeutic potential of endoscopy.

Keywords

endoscopy, colonoscopy, gastrointestinal system

DOI: 10.4328/ACAM.22760 Ann Clin Anal Med 2025;16(8):582-585
Received: 30.05.2025 Accepted: 04.07.2025 Published Online: 08.07.2025 Printed: 01.08.2025
Corresponding Author: Abdulkadir Çelik, Department of General Surgery, Gaziantep Dr.Ersin Arslan Training and Research Hospital, Gaziantep, Türkiye.
E-mail: c.abdulkadir@hotmail.com **P:** +90 506 662 78 31
Corresponding Author ORCID ID: 0000-0002-5537-7791
Other Authors ORCID ID: Arslan Hasan Kocamaz, ORCID ID: 0000-0002-5257-9611. Ömer Kişi, ORCID ID: 0000-0001-8606-2453
Berkan Acar, ORCID ID: 0000-0001-9798-295X. Elif Yılmaz, ORCID ID: 0009-0000-6782-8820

Introduction

Endoscopic examinations are crucial in diagnosing gastrointestinal system pathologies.[1,2] Upper gastrointestinal (upper GI) endoscopy involves advancing an endoscope via the oral route to examine the esophagus, stomach, and duodenum. Colonoscopy involves inserting a colonoscope through the anal canal to evaluate the rectum, all colon segments, and the terminal ileum. These endoscopic methods, which allow for the examination of the luminal surfaces of these organs, are essential for the comprehensive evaluation of gastrointestinal diseases.[3]

Endoscopy is currently widely used for the early diagnosis, treatment, and follow-up of both benign and malignant gastrointestinal disorders.[4] It is also employed in numerous therapeutic interventions, such as controlling gastrointestinal bleeding, dilating strictures, removing foreign bodies, and placing stents in cases of advanced tumors.[3]

Colonoscopy is considered the gold standard for evaluating the lower gastrointestinal system. This technique allows for the assessment of all segments of the colon, the collection of biopsies, and the performance of polypectomy on polyps detected during the procedure.[5] Furthermore, for therapeutic purposes, colonoscopy can be used to manage lower gastrointestinal bleeding, extract foreign bodies, and perform detorsion in cases of sigmoid colon volvulus.[3] However, it is important to note that these procedures can be associated with complications, such as perforation and bleeding, that may require surgical intervention.[6]

Upper gastrointestinal malignancies are among the leading causes of mortality worldwide.[7] Endoscopy enables the early detection and diagnosis of these malignancies. Upper GI endoscopies are performed for indications including dyspeptic complaints, dysphagia, retrosternal burning or pain, epigastric burning or pain, bloating, belching, nausea, vomiting, unexplained iron deficiency anemia, hematemesis, positive fecal occult blood tests, and suspected malignancy on imaging studies.[8] Consequently, the luminal and mucosal structures of the upper GI organs are directly examined, with biopsies obtained when necessary for further evaluation.

According to the latest data, colorectal cancers are one of the most common types of cancer among both sexes worldwide.[9] Current guidelines recommend that individuals at elevated risk undergo at least one colonoscopy screening beginning at the age of 45. Colonoscopy screenings are critical for the early diagnosis and treatment of colorectal diseases. Additional indications for colonoscopy include hematochezia, tenesmus, positive fecal occult blood test results, weight loss, changes in bowel habits, and a family history of colorectal cancer in first-degree relatives. Colonoscopy not only enables the detection of both benign and malignant colonic pathologies but also allows for concurrent diagnostic and therapeutic interventions.[10]

The prevalence of gastrointestinal diseases exhibits regional variability worldwide. Therefore, we believe that analyzing the local outcomes of endoscopy centers may contribute to the more effective use of these procedures.

Materials and Methods

In our study, the results of upper and lower gastrointestinal endoscopic examinations performed at the General Surgery Endoscopy Unit of Necmettin Erbakan University Meram Faculty of Medicine Hospital between January 1 and December 31, 2024, were retrospectively evaluated. This study was conducted in accordance with the principles of the Declaration of Helsinki.

Patients with a history of major gastrointestinal surgery were excluded from the study. For the included patients, data such as age, gender, findings from the procedures, pathology results, and procedure-related complications were extracted from the hospital information management system. All data were recorded and analyzed anonymously.

Ethical Approval

This study was approved by the Ethics Committee of Necmettin Erbakan University (Date: 13.06.2025, Decision No: 2025/5825).

Statistical Analysis

Statistical analyses were performed using SPSS version 27.0 (IBM Corp., Armonk, NY, USA). Continuous variables were expressed as mean ± standard deviation, and categorical variables were presented as numbers and percentages. Since the study was descriptive, no comparative statistical analyses were performed.

Reporting Guidelines

This study was reported according to the STROBE guidelines.

Results

Out of the 2,824 patients included in the study, 1,965 underwent upper gastrointestinal endoscopy and 859 underwent colonoscopic examination.

Among the patients who underwent upper GI endoscopy, 54.9% were female and 45.1% were male. The youngest patient was 17 years old, and the oldest was 93 years old. The mean age was 52.4 years for men and 47.4 years for women. Normal findings were observed in 19.2% of the cases. Gastritis was detected in 40.8% of the cases, hiatal hernia in 13.4%, esophagitis in 10.6%, duodenal ulcer in 5.6%, and gastric ulcer in 5.1%. The overall malignancy rate was calculated as 1.8% (Table 1). Among the patients diagnosed with malignancy, 4 (0.2%) had esophageal cancer and 31 (1.6%) had gastric cancer.

Among the patients who underwent colonoscopy, 52.7% were male and 47.3% were female. The youngest patient was 18 years old,

Table 1. *Upper GI endoscopy results*

Findings	n (%)
Normal	378 (19.2)
Gastritis	802 (40.8)
Hiatal hernia	264 (13.4)
Esophagitis	208 (10.6)
Duodenal ulcer	110 (5.6)
Gastric ulcer	101 (5.1)
Gastric polyp	39 (2)
Malignancy	35 (1.8)
Gastric cancer	31 (1.6)
Esophageal cancer	4 (0.2)
Others (diverticula, Barrett's esophagus. varices, pyloric stenosis etc.)	28 (1.4)

Table 2. *Colonoscopy results*

Findings	n (%)
Normal	427 (49.7)
Polyp	154 (17.9)
Hemorrhoids	126 (14.6)
Diverticula	67 (7.8)
Malignancy	41 (4.7)
Inflammatory bowel diseases	25 (2.9)
Others (anal fistula, angiodysplasia, solitary rectal ulcer etc.)	19 (2.2)

and the oldest was 87. The mean age was 52.7 years for males and 47.3 years for females. In the lower GI examinations, no pathology was detected in 427 patients. Malignancy was identified in 4.7% of the patients undergoing colonoscopy. Polyps were found in 17.9% of cases, hemorrhoidal disease in 14.6%, diverticula in 7.8%, and inflammatory bowel disease in 2.9% (Table 2). There were no complications or mortalities during or after upper gastrointestinal endoscopic procedures. In the colonoscopy group, only one patient experienced colonic perforation during the procedure; however, no mortality was observed.

Discussion

Endoscopy is fundamentally important due to its capacity to facilitate a wide range of diagnostic and therapeutic interventions for gastrointestinal lesions. In recent years, endoscopic procedures have evolved to be safer and more effective. However, as an interventional technique, it requires the use of anesthesia and carries the inherent risk of potential complications.[3]

Currently, there is no dedicated endoscopic screening program for upper gastrointestinal malignancies.[7] Instead, diagnostic endoscopy is performed in patients exhibiting alarm symptoms or possessing relevant risk factors. The findings from endoscopic examinations guide the selection of appropriate treatment modalities, and follow-up endoscopic assessments are planned when necessary.[4,8]

The prevalence of upper gastrointestinal (GI) pathologies varies regionally in the literature.[11,12] In upper GI endoscopies performed for indications such as dyspepsia, dysphagia, and epigastric pain, benign pathologies are predominantly encountered, while malignant conditions of the stomach and esophagus are relatively rare.[13,14] In our study, the most frequently observed pathologies were gastritis (40.8%), hiatal hernia (13.4%), and esophagitis (10.6%). Previous studies have reported that the incidence of gastric cancer ranges from 0.5% to 4%, and that of esophageal cancer from 0.2% to 0.4%.[14,15] In our series, the overall malignancy rate was determined to be 1.8%, with esophageal cancer accounting for 0.2% and gastric cancer for 1.6% of the cases.

The rate of major complications in diagnostic upper GI endoscopies is notably low. For instance, Yücel et al. reported no complications or mortalities in a series of 7,703 upper GI endoscopies, and Tamer et al. similarly observed no complications in their series of 5,551 cases.[14,15] In our study, no major complications or mortalities were identified in the upper GI endoscopy records.

Colorectal cancer, one of the most common malignancies and a significant cause of mortality worldwide, is detected in our country using the fecal occult blood test as a noninvasive screening tool.[16] In patients with a positive test result, colonoscopy is subsequently performed for screening based on risk assessment. Current guidelines recommend initiating colonoscopy screening at the age of 45 according to the individual's risk profile.[10] In our study, the mean age for male patients undergoing colonoscopy was 52.7 years, while that for female patients was 47.3 years. The overall malignancy detection rate was calculated at 4.7%. For comparison, Köker et al. reported a rate of 6.1%, Yaşar et al. reported a rate of 4%, and Yılmaz et al. detected adenocarcinoma in 18 out of 322 patients.[16] These findings indicate that our malignancy detection rate is consistent with the literature.

Normal colonoscopic findings were observed in 49.7% of the cases in our study. Similar studies have reported normal findings in a wide range of percentages, which may be attributed to the variability in the indications for colonoscopy.

In our study, hemorrhoids were the second most frequently observed pathology, with a prevalence of 14.6%. The considerable variability in hemorrhoid rates reported across similar studies may be partly due to incomplete documentation, differences in patient populations, diagnostic criteria, and endoscopic techniques.[5]

Limitations

Although our findings provide valuable insights into gastrointestinal pathologies, the study's retrospective, single-center design may limit the generalizability of its results and introduce inherent selection and documentation biases. Furthermore, when compared with international data, our findings both align with and diverge from previously reported rates, highlighting regional variations in the prevalence of gastrointestinal disorders.

Conclusion

In light of these observations, future prospective multicenter studies are warranted to validate our results and further explore the diagnostic and therapeutic potential of endoscopy.

Declarations

Animal and Human Rights Statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Informed Consent

Informed consent was not required due to the retrospective design of the study and the use of anonymized patient data.

Data Availability

The datasets used and/or analyzed during the current study are not publicly available due to patient privacy reasons but are available from the corresponding author on reasonable request.

Conflict of Interest

The authors declare that there is no conflict of interest.

Funding

None.

Abbreviations

GI: Gastrointestinal

References

1. Vennes JA. Gastrointestinal endoscopy. In: Wyngaarden JB, Smith LH Jr, Bennett JC, eds. Cecil Textbook of Medicine. 19th ed. WB Saunders; 1992:630-634.

2. Kuipers EJ, Haringsma J. Diagnostic and therapeutic endoscopy. J Surg Oncol. 2005;92(3):203-209.

3. Valdastri P, Simi M, Webster RJ III. Advanced technologies for gastrointestinal endoscopy. Annu Rev Biomed Eng. 2012;14:397-429. doi:10.1146/annurev-bioeng-071811-150006

4. Evans JA, Chandrasekhara V, Chathadi KV, et al. The role of endoscopy in the management of premalignant and malignant conditions of the stomach. Gastrointest Endosc. 2015;82(1):1-8. doi:10.1016/j.gie.2015.03.1967

5. Karaca A. Genel cerrahi endoskopi ünitemizdeki rektal kanamalarda kolonoskopi deneyimlerimiz [Our colonoscopy experiences for rectal hemorrhages in our endoscopy department of general surgery]. Ankara Med J. 2014;14(4):151-155. doi:10.17098/amj.93434

6. Rex DK, Bond JH, Winawer S, et al. Quality in the technical performance of colonoscopy and the continuous quality improvement process for colonoscopy: recommendations of the US Multi-Society Task Force on Colorectal Cancer. Am J Gastroenterol. 2002;97(6):1296-1308. doi:10.1111/j.1572-0241.2002.05812.x

7. Gupta N, Bansal A, Wani SB, Gaddam S, Rastogi A, Sharma P. Endoscopy for upper GI cancer screening in the general population: a cost-utility analysis. Gastrointest Endosc. 2011;74(3):610-624.e2. doi:10.1016/j.gie.2011.05.001

8. Shaukat A, Wang A, Acosta RD, et al. The role of endoscopy in dyspepsia. Gastrointest Endosc. 2015;82(2):227-232. doi:10.1016/j.gie.2015.04.003

9. Patel SG, May FP, Anderson JC, et al. Updates on age to start and stop colorectal cancer screening: recommendations from the US Multi-Society Task Force on Colorectal Cancer. Gastroenterology. 2022;162(1):285-299. doi:10.1053/j.gastro.2021.10.007

10. Davila RE, Rajan E, Adler D, et al. ASGE guideline: the role of endoscopy in the diagnosis, staging, and management of colorectal cancer. Gastrointest Endosc. 2005;61(1):1-7. doi:10.1016/s0016-5107(04)02391-0

11. Crew KD, Neugut AI. Epidemiology of upper gastrointestinal malignancies. Semin Oncol. 2004;31(4):450-464. doi:10.1053/j.seminoncol.2004.04.021

12. Fatih A, Yasin O, Hakan D, Yavuz A. Should every region use the same gastric cancer scanning and treatment approaches? Let's reconsider: a northeastern Turkey example. BMC Gastroenterol. 2016;16(1):120. doi:10.1186/s12876-016-0539-8

13. Ateş M, Köşüş A, Köşüş N, Güler A. Results of upper gastrointestinal system endoscopy in women with dyspeptic symptoms. Eurasian J Med. 2009;41(2):80-83.

14. Yücel Y, Aktümen A, Aydoğan T, et al. Üst gastrointestinal sistem endoskopisi: 7703 olgunun retrospektif analizi [Upper gastrointestinal endoscopy: a retrospective analysis of 7703 cases]. Endoskopi Gastrointestinal. 2016;24(1):1-3. doi:10.17940/endoskopi.306994

15. Tamer A, Korkut E, Korkmaz U, Akcan Y. Üst gastrointestinal endoskopi sonuçları: Düzce bölgesi [The upper gastrointestinal endoscopy results: region of Duzce]. KTD. 2005;6(2):31-34.

16. Köker G, Kocabıyık AB, Eren Durmuş M, et al. Evaluation of colonoscopy and histopathology results in patients undergoing colonoscopy for occult blood positivity in stool. Akademik Gastroenterol Derg. 2025;24(1):9-14. doi:10.17941/agd.1684092

How to Cite

Abdulkadir Çelik, Arslan Hasan Kocamaz, Ömer Kişi, Berkan Acar, Elif Yılmaz. Analysis of one-year endoscopy data: a single center retrospective study. Ann Clin Anal Med 2025;16(8):582-585. doi:10.4328/ACAM.22760