Published in final edited form as:

Gastrointest Endosc. 2009 February ; 69(2): . doi:10.1016/j.gie.2008.04.063.

A closer look at same-day bidirectional endoscopy

Jennifer Urquhart, MD, Glenn Eisen, MD, MPH, Douglas O. Faigel, MD, Nora Mattek, MPH, Jennifer Holub, MA, MPH, and David A. Lieberman, MD

Current affiliations: Oregon Health and Science University, Department of Gastroenterology, Veterans Administration Portland Medical Center, Portland, Oregon, USA

Abstract

Background—Same-day bidirectional endoscopy (BDE) is commonly used in clinical practice.

Objective—Our purpose was to determine the frequency, patient demographics, indications, and significant endoscopic findings for patients undergoing BDE.

Design—Retrospective study with a national endoscopic database.

Setting—Diverse clinical practice settings in the United States, including 75% from private practice.

Patients—A total of 591,074 adult patients had upper or lower endoscopy; 66,265 patients (11.2%) with same-day BDE and a subgroup (n = 9067) with a common indication for both upper and lower examinations are the subjects of this analysis.

Main Outcome Measurements—Age, sex, and procedure indication were analyzed in all subjects. Significant endoscopic findings were measured in patients with a single indication of anemia, a positive fecal occult blood test (FOBT), or abdominal pain/dyspepsia (pain) for both upper and lower endoscopy.

Methods—The Clinical Outcomes Research Initiative (CORI) national endoscopic database was analyzed to determine the number of patients who underwent same-day BDE between 2000 and 2004. Patients with a single indication of anemia, positive fecal occult blood test (FOBT), or abdominal pain/dyspepsia (pain) on both EGD and colonoscopy were included for the analysis of endoscopic findings. Significant upper GI findings were defined as suspected malignancy, arteriovenous malformation (AVM), ulcer, Barrett's esophagus, and stricture. Significant lower GI findings included suspected malignancy, polyp >9 mm, and AVM.

Results—A total of 591,074 patients had upper and/or lower endoscopy; 66,265 patients (11.2%) had same-day BDE. The majority of patients were female (52.1%), and the mean age of patients with BDE was 60.8 years. A total of 6538 patients (9.9%) had anemia, 1169 (1.8%) had a positive FOBT, and 1360 (2.1%) had pain as the sole indication for both examinations. After adjustment for age and sex, significant findings were higher in patients with anemia than in those with pain (odds ratio 1.89; 95% CI, 1.59-2.26) and for patients with positive FOBT versus pain (odds ratio 1.83; 95% CI, 1.48-2.26).

Limitations—Retrospective analysis with possible bias. Fewer patients with pain had significant findings compared to the other two groups (P value <.0001).

Reprint requests: Jennifer Urquhart, MD, Department of Gastroenterology, Oregon Health & Science University, 3181 SW Sam Jackson Park Rd, Mailcode L-461, Portland, OR 97239.

DISCLOSURE

The authors report that there are no disclosures relevant to this publication. D. A. Lieberman is the executive director of CORI, a nonprofit organization that receives funding from federal and industry sources. The CORI database was used in this study. This potential conflict of interest has been reviewed and managed by the OHSU Conflict of Interest in Research Committee.

Conclusions—More than 10% of patients undergoing upper or lower endoscopy receive same-day BDE. BDE commonly revealed important conditions in patients with anemia or positive FOBT. Bidirectional endoscopy commonly revealed important pathology in patients with anemia or positive FOBT. Patients with pain had a lower prevalence of serious findings compared to the other groups studied. The benefits of BDE in patients with pain are uncertain and require additional investigation.

Same-day upper endoscopy and colonoscopy (bidirectional endoscopy [BDE]) are commonly performed to evaluate for GI conditions. However, little is known about the demographics, key indications, or significant findings of patients undergoing BDE. Current guidelines recommend BDE to evaluate active GI bleeding and iron deficiency anemia when the first examination is not diagnostic.¹⁻⁶ Controversial indications for BDE include positive fecal occult blood tests (FOBT) and abdominal pain. Theoretically, a positive FOBT can occur from lesions within both the upper and lower GI tracts. As little as 5 to 10 mL of blood loss from the upper GI tract can cause a positive FOBT test.⁷ However, the benefit of performing an EGD if colonoscopy is first completed and has negative results is unclear. Several studies report a lack of clinically significant lesions found on EGD in patients with positive FOBT and recommend only colonoscopy for evaluating this subset of patients.⁸⁻¹⁰

Substantial evidence for the utility of EGD diagnosing the etiology of abdominal pain is lacking in patients without alarming symptoms.¹¹ Even less clear is the role for BDE in patients with abdominal pain. We postulated that few endoscopic findings would be present on BDE for abdominal pain.

The goals of this study were to use a national endoscopic database to determine the (1) frequency of same-day BDE in diverse practice settings, (2) demographics of patients undergoing same-day BDE, (3) indications for patients receiving BDE, and (4) prevalence of significant endoscopic findings in specific cohorts with a single common indication for both procedures.

METHODS

The Clinical Outcomes Research Initiative (CORI) provided the data for this study. CORI is a national endoscopic database that was developed in 1995 to study the outcomes of endoscopic procedures. This database has been an exceptional resource for promoting endoscopic clinical research.

Gastroenterologists generate a computerized endoscopic report. Deidentified report data are electronically transmitted to a central repository. These data are then merged with reports from all sites and are available for analysis.

The CORI national endoscopic database was analyzed to determine the total number of patients who had received either EGD or colonoscopy and the number of patients who had undergone complete same-day BDE between January 1, 2000, and December 31, 2004. During the study period, 65 adult practices and more than 500 endoscopists participated in CORI. Patients were included in the study if they were at least 20 years of age and procedures were performed at nonpediatric sites. Incomplete procedures were not included. If a patient had BDE in 1 day, on more than 1 occasion, the first bidirectional study was analyzed. Patients with 3 or more examinations on 1 day were excluded, as were patients with age discrepancies on their examinations. We evaluated the demographic information (age, sex, race/ethnicity, site type) of BDE patients and the most common indications for receiving the procedures.

We identified patients with the same indication for receiving both upper and lower endoscopy as the subjects of this analysis. We recognized that other patients may have had valid, but distinct, indications for both an upper and lower examination. We were primarily interested in patients for whom the bidirectional examination was performed because of a specific sign or symptom. Patients with a sole common indication of anemia, positive FOBT, or abdominal pain/dyspepsia on both upper and lower endoscopy were then included for the analysis of endoscopic findings. We defined significant upper GI findings as suspected malignancy, arteriovenous malformation (AVM), ulcer, Barrett's esophagus, and stricture. Findings of interest for the lower GI tract included suspected malignancy, polyp >9 mm, and AVM. The above findings were chosen for investigation because we believed that they were clinically important and because they were measurable within the CORI database.

Statistical analysis

Comparisons of proportions were performed with Pearson χ^2 tests with Yates' correction for continuity where appropriate. Continuous variables were compared with 1-way analysis of variance. Multivariate logistic regression was used to independently estimate the odds ratios (OR) for identifying any significant clinical finding on EGD or colonoscopy and additionally for identifying polyps >9 mm on colonoscopy among the 3 groups after adjustment for the significant confounding factors of age (continuous) and sex. It is recognized that there were several statistical tests performed on data arising from individual patients. It is noted that no findings of statistical significance ($P < .05$) would be removed by Bonferroni's method applied as follows. Correction was first considered for the multivariate logistic regression analyses, taken as the main definitive results because they determined those variables independently associated with the outcomes of interest (significant clinical findings and identification of large polyps >9 mm) after adjustment for the contributions of the other variables.

Correction was then considered for the univariate statistical tests in light of the totality of statistical testing, including the multivariate logistic regression analyses.

RESULTS

During the study period, 591,074 unique patients had upper or lower endoscopy. A total of 66,265 patients (11.2%) had same-day BDE. Table 1 demonstrates the demographics of patients receiving BDE performed on the same day.

The most common EGD indications among these 66,265 patients undergoing BDE were reflux/heartburn (29.8%) and abdominal pain/bloating/dyspepsia (27.2%) (Table 2). Of note, multiple indications may have been checked in the endoscopy report.

The most common colonoscopy indications for patients receiving BDE were anemia (21.0%) and hematochezia (16.5%) (Table 3).

Of the 66,265 patients undergoing BDE we analyzed the characteristics of 3 cohorts of patients with the same sole indication for both procedures. Anemia, abdominal pain/dyspepsia, and positive FOBT were chosen for analysis because these 3 indications were the most common overlapping indications for EGD and colonoscopy cited by the participating endoscopists. The sole indication of anemia represented 6538 patients (9.9%) in the study group. A total of 1169 (1.8%) patients had positive FOBT reported as the only indication on both upper and lower endoscopy, and 1360 (2.1%) had abdominal pain/dyspepsia as the single indication for both examinations. Overall, our groups of interest comprised about 14% of all patients undergoing BDE. The demographic data for our 3 cohorts are presented

in Table 4. Patients with abdominal pain were younger and more likely to be women than were the other groups ($P < .0001$).

Table 5 demonstrates the significant endoscopic findings that were discovered in the 3 subsets of patients. Patients with abdominal pain/dyspepsia as the sole indication had fewer positive findings on EGD or colonoscopy than the anemia and positive FOBT cohorts ($P < .0001$). The prevalence of upper GI findings was similar in patients with anemia and positive FOBT. After adjustment for age and sex, the ORs for significant findings were higher in patients with anemia than in those with abdominal pain (OR 1.89; 95% CI, 1.59-2.26) and for patients with positive FOBT versus abdominal pain (OR 1.83; 95% CI, 1.48-2.26).

As Table 6 displays, significant findings were present on EGD among 11.9% of patients being examined for positive FOBT with a negative colonoscopy. This prevalence is similar to that of patients examined for anemia only (14.0%).

The OR for identifying a polyp >9 mm on colonoscopy was estimated for each group by means of logistic regression analysis. Because colon polyps occur more commonly in older men¹² and the abdominal pain/dyspepsia group consisted of proportionately more younger women, the groups were adjusted for age and sex. Even after adjustment for age and sex, patients with FOBT as the sole indication were significantly more likely (OR 2.16; 95% CI, 1.51-3.09, $P < .0001$) to have a polyp >9 mm found compared with the patients with abdominal pain/dyspepsia only. In addition, patients with anemia were more likely to have a polyp >9 mm versus patients with abdominal pain (OR 1.45; 95% CI, 1.51-3.09, $P = .0156$).

DISCUSSION

More than 10% of unique patients undergoing upper or lower endoscopy receive same-day BDE. In the majority of cases, there is a distinct and separate indication for each procedure. For example, a patient with reflux may also be receiving a screening colonoscopy. We suspect that the bi-directional examinations were commonly performed for patient convenience and to minimize exposure to conscious sedation to 1 occurrence. We studied a subgroup of patients who had a single specific indication for both procedures and identified findings in the upper and lower GI tract that most physicians would consider clinically important. In cases where the indication for both examinations was the same (13.7%), the most common reasons for BDE were anemia, positive FOBT, and abdominal pain.

Patients with abdominal pain/dyspepsia were younger and more likely to be women than were patients with positive FOBT or anemia. BDE commonly revealed important conditions in patients with anemia or positive FOBT. Significant findings were more common in either the upper or lower GI tract in patients with anemia and positive FOBT compared with patients with abdominal pain/dyspepsia.

It is well established that patients with active GI bleeding or iron deficiency anemia are likely to have clinical conditions on both upper and lower endoscopies.¹⁻⁶ In contrast, the utility of EGD in patients with a positive FOBT has remained more controversial over the past decade. Many studies in our current literature contend that EGD has limited value in patients with positive FOBT and negative colonoscopy.⁸⁻¹⁰ Several studies, however, show benefit in performing an EGD in patients with a positive FOBT and a negative colonoscopy.¹³⁻¹⁶ In fact, some researchers have published results showing that in patients with a positive FOBT, upper GI lesions occurred more frequently than do colon lesions.⁷ Our study suggests that clinically significant findings were found on both EGD and colonoscopy in patients for whom a positive FOBT was the single primary indication for BDE. This also supports the position of the American Gastroenterological Association, that a positive FOBT and iron deficiency anemia represent a continuum of the same clinical spectrum and that it is

reasonable to perform EGD if colonoscopy is negative.¹ In our study, if colonoscopy was negative in patients with a positive FOBT, the yield of upper GI conditions was about 12%. This is consistent with Bini et al,¹⁴ where an upper GI source of occult bleeding was detected in 13% of asymptomatic patients with a positive FOBT and a negative colonoscopy. Hsia and al-Kawas¹⁵ also reported that a significant pathologic condition was diagnosed on EGD in 27% of patients with positive FOBT and a negative colonoscopy. The latter study may have had an inflated yield of upper endoscopy findings, however, because they included patients with iron deficiency anemia within their study group. In our opinion, the value of EGD is still uncertain, but our results support previous reports that significant conditions are commonly found in the upper GI tract during endoscopy for a positive FOBT.

There were several potential limitations to our study. We cannot exclude the possibility that patients actually had more than one indication for both procedures. We are limited to the data provided by the endoscopist in the CORI procedure report, and it is possible that patients may have had multiple indications for the procedures but that only a sole indication was listed. In addition, we do not know how many patients had an initial procedure for anemia or a positive FOBT, and no further examination was done because a significant condition was identified on the first examination, which could explain the anemia or positive FOBT. This analysis only focused on patients who had bidirectional examinations. Our patients with a positive FOBT may have represented a selected sample; among the total patients in the database during the study period with a positive FOBT, the majority (24,650 patients) had only colonoscopy compared with the 1169 patients with a positive FOBT who underwent BDE. Another study limitation is that we cannot accurately identify which examination was performed first during the procedure day. In clinical practice, upper endoscopies are generally performed first, followed by colonoscopy; however, this may not be the case in all instances recorded in our database. Therefore, further studies are warranted to determine whether EGD in patients with a positive FOBT are cost-effective or change clinical outcomes or patient management.

This study demonstrated a lower prevalence of clinically important findings in the upper and lower GI tracts in patients with abdominal pain/dyspepsia only compared with patients with anemia or a positive FOBT only. Published guidelines recommend that in patients greater than 50 years old with alarm symptoms (weight loss, anemia, early satiety, vomiting), endoscopy is the first-line examination for dyspepsia.¹⁷ Lieberman et al¹¹ reported that patients older than 50 years with one or more alarm symptom were at significantly increased risk for malignancy and ulcers. Patients with abdominal pain as the sole primary indication for both EGD and colonoscopy in this study were younger and more likely to be women than were the other groups studied. It is possible that this contributed to the lower prevalence of findings on BDE in our study. However, even when age and sex were adjusted, patients with abdominal pain/dyspepsia only were less likely to have significant endoscopic findings than were the other 2 groups. When the data regarding large (>9 mm) colon polyps were specifically evaluated, the pain cohort of patients had fewer polyps than did patients with anemia and a positive FOBT. The efficacy of performing BDE for patients with abdominal pain/dyspepsia only and lacking alarm symptoms remains to be determined. There may be unmeasured benefits of performing BDE in these patients, such as decreasing patient anxiety and reducing health care utilization.

In summary, the results of this study show that BDE revealed significant pathologic conditions in patients with anemia and a positive FOBT. Patients with abdominal pain/dyspepsia had a lower prevalence of serious findings on EGD and colonoscopy compared with the groups with anemia and a positive FOBT. Further studies are necessary to determine the utility of EGD in patients with a positive FOBT and a negative colonoscopy.

In addition, the benefit of BDE remains uncertain in patients with abdominal pain and requires further investigation.

Acknowledgments

Grant Support: This project was supported with funding from NIDDK UO1 CA 89389-01 and the American Cancer Society. In addition, the practice network (Clinical Outcomes Research Initiative) has received support from the following entities to support the infrastructure of the practice-based network: AstraZeneca, Bard International, Pentax USA, ProVation, Endosoft, GIVEN Imaging, and Ethicon. The commercial entities had no involvement in this research. Dr. Lieberman is the executive director of the Clinical Outcomes Research Initiative (CORI), a non-profit organization that receives funding from federal and industry sources. The CORI database is used in this study.

References

1. American Gastroenterological Association. American Gastroenterological Association medical position statement: evaluation and management of occult and obscure gastrointestinal bleeding. *Gastroenterology*. 2000; 118:197–200. [PubMed: 10611169]
2. Rockey DC, Cello JP. Evaluation of the gastrointestinal tract in patients with iron-deficiency anemia. *N Engl J Med*. 1993; 329:1691–5. [PubMed: 8179652]
3. Hardwick RH, Armstrong CP. Synchronous upper and lower gastrointestinal endoscopy is an effective method of investigating iron-deficiency anaemia. *Br J Surg*. 1998; 85:1725–8.
4. Luman W, Ng KL. Audit of investigations in patients with iron deficiency anaemia. *Singapore Med J*. 2003; 44:504–10. [PubMed: 15024453]
5. Gordon SR, Smith RE, Power GC. The role of endoscopy in the evaluation of iron deficiency anemia in patients over the age of 50. *Am J Gastroenterol*. 1994; 89:1963–7. [PubMed: 7942718]
6. Coban E, Timuragaoglu A, Meric M. Iron deficiency anemia in the elderly: prevalence and endoscopic evaluation of the gastrointestinal tract in outpatients. *Acta Haematol*. 2003; 110:25–8. [PubMed: 12975553]
7. Rockey DC, Koch J, Cello JP, et al. Relative frequency of upper gastrointestinal and colonic lesions in patients with positive fecal occult blood tests. *N Engl J Med*. 1998; 339:153–9. [PubMed: 9664091]
8. Chen YK, Gladden DR, Kestenbaumetal DJ. Is there a role for upper gastrointestinal endoscopy in the evaluation of patients with occult blood-positive stool and negative colonoscopy? *Am J Gastroenterol*. 1993; 88:2026–9. [PubMed: 8249968]
9. Ali M, Yaqub M, Haider Z, et al. Yield of dual endoscopy for positive fecal occult blood test. *Am J Gastroenterol*. 2003; 98:82–5. [PubMed: 12526941]
10. Rasmussen M, Kronborg O. Upper gastrointestinal cancer in a population-based screening program with fecal occult blood test for colorectal cancer. *Scand J Gastroenterol*. 2002; 1:95–8.
11. Lieberman D, Fennerty MB, Morris CD, et al. Endoscopic evaluation of patients with dyspepsia: results from the National Endoscopic Data Repository. *Gastroenterology*. 2004; 127:1067–75. [PubMed: 15480985]
12. McCashland TM, Brand R, Lyden E, et al. Gender differences in colorectal polyps and tumors. *Am J Gastroenterol*. 2001; 96:882–6. [PubMed: 11280569]
13. Rockey D. Occult gastrointestinal bleeding. *N Engl J Med*. 1999; 341:38–46. [PubMed: 10387941]
14. Bini EJ, Rajapaksa RC, Valdes MT, et al. Is upper gastrointestinal endoscopy indicated in asymptomatic patients with a positive fecal occult blood test and negative colonoscopy? *Am J Med*. 1999; 106:613–8. [PubMed: 10378617]
15. Hsia PC, al-Kawas FH. Yield of upper endoscopy in the evaluation of asymptomatic patients with Hemoccult-positive stool after a negative colonoscopy. *Am J Gastroenterol*. 1992; 87:1571–4. [PubMed: 1442675]
16. Velez JP, Schwesinger WH, Stauffer J, et al. Bidirectional endoscopy in patients with fecal occult blood. *Surg Endosc*. 2002; 16:117–20. [PubMed: 11961620]
17. Eisen GM, Dominitz JA, Faigel DO, et al. The role of enoscopy in dyspepsia. *Gastrointest Endosc*. 2001; 54:815–7. [PubMed: 11726874]

Abbreviations

AVM	arteriovenous malformation
BDE	bidirectional endoscopy
CORI	Clinical Outcomes Research Initiative
FOBT	fecal occult blood test
OR	odds ratio

Table 1

Demographics of patients undergoing bidirectional endoscopy

Characteristic	N	%
Total number of unique patients*	66,265	
Age class:		
20 – 29	1204	1.8
30 – 39	3281	5.0
40 – 49	9371	14.1
50 – 59	18335	27.7
60 – 69	15567	23.5
70 – 79	13258	20.0
80	5249	7.9
Mean Age (SD)	60.8 (13.8)	
Gender:		
Female	34493	52.1
Male	31772	48.0
Exclude VA sites:		
Female	33700	58.0
Male	24415	42.0
Race/Ethnicity:		
White non-Hispanic	53299	80.4
Black non-Hispanic	4883	7.4
Asian/Pacific Islander non-Hispanic	1555	2.4
Native American non-Hispanic	727	1.1
Multi-racial non-Hispanic	128	0.2
Hispanic	3753	5.7
Missing/unknown	1920	2.9
Site type:		
Community	48493	73.2
HMO	1089	1.6
Academic	8533	12.9
VA	7357	11.1
Military	793	1.2

Table 2

Most common EGD indications for the 66,265 patients undergoing BDE

INDICATION	N	%
Reflux/heartburn	19,768	29.83
Abdominal pain/bloating/dyspepsia	17,118	25.83
Anemia	13,666	20.62
Dysphagia	9,333	14.08
Positive FOBT	3,549	5.36

Table 3

Most common colonoscopy indications for the 66,265 patients undergoing BDE

INDICATION	N	%
Anemia	13,901	20.98
Hematochezia	10,906	16.46
Routine/Average Risk	9,272	13.99
Abdominal pain/ bloating	9,163	13.83
Positive FOBT	8,443	12.74

Table 4

Demographic Characteristics for each group defined by same indication for upper and lower endoscopy

	Anemia N (%)	+FOBT N (%)	Abdominal Pain/Dyspepsia N (%)	p-value
Totals	6,538	1169	1360	
Age class:				
20-29	43 (0.7%)	2 (0.2%)	56 (4.1%)	<0.0001
30-39	208 (3.2%)	23 (2.0%)	109 (8.0%)	
40-49	829 (12.7%)	133 (11.4%)	245 (18.0%)	
50-59	1265 (19.4%)	310 (26.5%)	372 (27.4%)	
60-69	1503 (23.0%)	286 (24.5%)	295 (21.7%)	
70-79	1801 (27.6%)	297 (25.4%)	207 (15.2%)	
>=80	889 (13.6%)	118 (10.1%)	76 (5.6%)	
Mean Age (SD)	64.9 (13.7)	64.0 (12.5)	57.1 (14.5)	<0.0001
Gender:				
Female	3242 (49.6%)	565 (48.3%)	828 (60.9%)	<0.0001
Male	3296 (50.4%)	604 (51.7%)	532 (39.1%)	
Race/Ethnicity:				
White Non-Hispanic	4991 (76.3%)	936 (80.1%)	1086 (79.9%)	
Black Non-Hispanic	753 (11.5%)	100 (8.6%)	88 (6.5%)	
Hispanic	350 (5.4%)	49 (4.2%)	93 (6.8%)	
Asian/Pacific Islander	130 (2.0%)	66 (5.7%)	40 (2.9%)	
Native American	121 (1.9%)	8 (0.7%)	20 (1.5%)	
Multi-racial	14 (0.2%)	6 (0.5%)	2 (0.2%)	
Unknown	179 (2.7%)	4 (0.3%)	31 (2.3%)	
Site Type:				
Community/HMO	4100 (62.7%)	1014 (86.7%)	1060 (77.9%)	
Academic	877 (13.4%)	79 (6.8%)	220 (16.2%)	
VAMC/Military	1561 (23.9%)	76 (6.5%)	80 (5.9%)	

Table 5

Significant Endoscopic Findings

	Anemia N= 6,538 (%)	+FOBT N= 1169 (%)	Abdominal Pain N= 1360(%)
EGD FINDINGS			
Suspected malignancy	22 (0.3%)	0 (0%)	3 (0.2%)
AVM	231 (3.5%)	17 (1.5%)	3 (0.2%)
Ulcer	377 (5.8%)	56 (4.8%)	51 (3.8%)
Barretts Esophagus	252 (3.9%)	49 (4.2%)	35 (2.6%)
Stricture	241 (3.7%)	40 (3.4%)	23 (1.7%)
Any significant finding	1061 (16.2%)	158 (13.5%)	110 (8.1%)
COL FINDINGS			
Suspected malignancy	116 (1.8%)	14 (1.2%)	4 (0.3%)
AVM	251 (3.8%)	34 (2.9%)	12 (0.9%)
Polyp > 9mm	409 (6.3%)	102 (8.7%)	48 (3.5%)
Any significant finding	729 (11.2%)	144 (12.3%)	63 (4.6%)

Table 6
Prevalence of findings on EGD and Colonoscopy when the other exam is negative

Prevalence of Significant EGD and COL Findings for each group

	Anemia Only N (%)	+ FOBT Only N (%)	Ab Pain/Dyspepsia Only N (%)	p-value
EGD finding with a negative COL	918 (14.0%)	139 (11.9%)	105 (7.7%)	<0.0001
COL finding with a negative EGD	586 (9.0%)	125 (10.7%)	58 (4.3%)	
EGD and COL find	143 (2.2%)	19 (1.6%)	5 (0.4%)	
No significant findings	4891 (74.8%)	886 (75.8%)	1192 (87.7%)	