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The Diagnosis of Diverticulitis in Outpatients: On What Evidence?

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Abstract

Purpose—Diverticular disease is common in the outpatient setting, yet rigorous study of diagnosis and management strategies is currently limited to hospitalized patients. Here, we characterize the clinical assessment generating the diagnostic label of diverticulitis in outpatients.

Methods—Encounters for diverticulitis were identified using ICD-9 diagnosis codes (562.11/562.13) from the electronic medical record system of a tertiary referral hospital and its regional clinics. The frequencies of various demographic and clinical variables were compared between patients presenting in the emergency room (ER) or outpatient Clinic.

Results—Between 2003 and 2008, 820 inpatients and 2576 outpatients met inclusion criteria (328 [13%] ER, 2248 [87%] Clinic). Compared to ER patients, Clinic patients were less likely to undergo urgent abdominal/pelvic CT scan (14% vs. 85%, $p<.0001$) or have an abnormal WBC count (35% vs. 69%, $p<.0001$). 24-hour events, including inpatient admission (30% ER vs. 3.5% Clinic, $p<.0001$) and colectomy (1.2% ER vs. 0.4% Clinic, $p=0.08$) were rare in both groups.

Conclusion—Diverticulitis in the outpatient setting is often characterized by infrequent use of CT scans, lack of leukocytosis, and rare need for urgent surgery or early admission. As this diagnostic label appears to be commonly applied without objective evidence, further study is needed to evaluate its validity.

Keywords

diverticulitis; outpatient; diagnostic strategy

INTRODUCTION

Diverticular disease is well-recognized as a common entity in Western culture, affecting nearly two-thirds of the population over age 80.[1–3] While many individuals with diverticulosis remain symptom-free, it is estimated that between 10% and 25% will develop diverticulitis in their lifetime.[2,4,5] Given the frequency of this diagnosis, its association with increased age, and the changing demographics of the US population, there is a clear need for evidence-based recommendations regarding diagnosis and optimal timing of surgical management.

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Unfortunately, the natural history of diverticulitis makes the development of such recommendations quite challenging. This is a heterogeneous disease, with a spectrum of presentations ranging from mild abdominal pain and fever, to gross rupture with ensuing peritonitis and shock.[6] Afflicted patients may initiate and maintain their care in either the outpatient or inpatient arena, and require treatment approaches involving both primary care and surgery. Because outpatient presentation is a common component of the natural history of diverticulitis, appropriate diagnostic strategies and management recommendations for new and recurring outpatients are important. However, outside of anecdotal reports, extremely little is known regarding the typical assessment used by providers in the outpatient population.[7] This results from the challenges inherent in studying this patient subgroup, unlike hospitalized patients on whom current practice guidelines are based.[8–11] Although some studies have included patients evaluated in the emergency room, the ability to capture this group or those evaluated in the clinic setting is limited. In fact, some have suggested that establishing a national registry would lead to a more thorough understanding of the complete spectrum of diverticulitis.[12] Regardless of the approach, a more clear understanding of the outpatient aspect of this disease is essential for the development of comprehensive recommendations addressing diagnosis, management, and optimal timing of surgical intervention.

Crucial unanswered questions regarding diverticulitis in the outpatient setting remain at this time. Number of annual visits, location of outpatient presentation, and range of disease severity are currently unknown. In addition, the diagnostic approaches used by outpatient providers are poorly described, as adherence to recommendations presented in clinical practice guidelines has not been well-studied. In order to address these important knowledge gaps, we implemented an analysis of outpatient encounters detected through the electronic medical record in a state-wide medical system. The goal of this study was to identify and characterize patients presenting with diverticulitis in the outpatient setting, and to critically evaluate the clinical assessment generating that diagnostic label.

METHODS

Data Sources

After study protocol approval was obtained from the University of Wisconsin Institutional Review Board, data was extracted from the electronic medical record system of the University of Wisconsin Hospital and Clinics (UWHC) and the University of Wisconsin Medical Foundation (UWMF). Data extraction was performed by programming resources in the Department of Family Medicine (DFM), who have developed the Clinical Data Warehouse (CDW) as a platform for accessing medical record data for research and educational purposes. The DFM-CDW is maintained under separate IRB approval.

Patients

All patients receiving care at a UWHC or UWMF medical facility were considered for inclusion in our study. Inclusion criteria included those patients with an inpatient or outpatient encounter (defined as occurring in the emergency room (ER) or Clinic) with an associated diagnosis code for diverticulitis (International Classification of Diseases, ninth revision, Clinical Modification [ICD-9-CM] code 562.11 or 562.13) during the time period from January 1, 2003 through October 16, 2008. Exclusion criteria included those patients under 40 years old at the time of the initial encounter. The number of inpatients meeting the same inclusion and exclusion criteria was recorded in order to define the total population of diverticulitis patients in our medical system during the study period; comparison of demographic and clinical features was not conducted for the purposes of this analysis.

Encounters of Interest

In several cases, there were multiple encounters per patient meeting inclusion criteria during the study period. In order to assess independent events, we chose to examine only the first chronological encounter, thus allowing each episode to represent a unique patient. In addition, the aim was to focus on outpatient encounters which represented initial assessment of symptoms, rather than follow-up from a prior outpatient visit or hospitalization. It was assumed that patients would be seen in follow-up within 6 weeks of their first visit or inpatient stay. Therefore, encounters occurring between 1/1/03 and 2/14/03 were excluded from the study, as the goal was to evaluate new episodes of diverticulitis.

Variables

Stratification Variables—Patients with an outpatient visit for diverticulitis were selected using ICD-9-CM diagnosis codes 562.11 and 562.13 identified from the administrative & billing databases. Point-of-service location was also determined, allowing these patients to be separated into two groups, those whose encounters occurred in an emergency room (ER) and those who were seen in an outpatient clinic (Clinic).

Descriptive Variables—For each patient, we obtained demographic data including age and gender from the clinical databases. Co-morbid conditions (diabetes, COPD/asthma, renal failure, and rheumatoid conditions) were identified using pre-defined DFM-CDW diagnosis groups, which categorize related conditions and their associated ICD-9-CM codes.

Outcome Variables—Using ICD-9-CM and CPT codes (Table 1), we identified pertinent clinical elements occurring in the 48 hour period surrounding the encounter of interest. These elements included imaging (abdominal x-ray, abdominal/pelvic computed tomography (CT) scan) and procedures (colectomy, colostomy, and abscess drainage). Laboratory data became part of the electronic medical record system for many outpatient locations beginning in 2006. Thus, for the subset of encounters occurring between February 15, 2006 and October 16, 2008, we determined the presence or absence of laboratory values including white blood cell count, hematocrit, and creatinine. Inpatient admission within 24 hours, defined as hospitalization with a primary visit reason of diverticulitis subsequent to the outpatient encounter of interest, was identified.

Statistical Analysis

The demographic characteristics and outcomes of diverticulitis patients by location (ER vs. Clinic) were described, and statistical differences evaluated using χ^2 tests for categorical variables and one-way ANOVA tests for continuous variables. Analyses were performed using SAS 9.1 software (SAS Institute, Cary, North Carolina). All tests of significance used 2-sided p-values at the 0.05 level.

RESULTS

Overall, 3396 unique encounters meeting inclusion and exclusion criteria during the 5-year study period were identified (Table 2), with 820 inpatient visits and 2576 outpatient visits (76%). Of the encounters which occurred in the outpatient setting, 328 (13%) took place in the ER, while the remaining 2248 (87%) encounters were in the Clinic. The mean age of patients seen in the ER was 56 years, compared to 60 years in the Clinic ($p<.0001$). Patients presenting to the ER were more likely to be male (53% vs. 45%, $p=.02$) and to have at least one pre-defined co-morbid condition (24% vs. 12%, $p<.0001$).

Figure 1 displays the proportion of patients seen in each outpatient setting who had imaging studies in the 48 hour period surrounding the encounter date. ER patients were more likely

than Clinic patients to undergo abdominal imaging, including abdominal x-ray (27% vs. 9%, $p<.0001$) and abdominal/pelvic CT scan (85% vs. 14%, $p<.0001$). The use of both imaging modalities was more frequent among ER patients than Clinic patients (23% vs. 3%, $p<.0001$).

The proportion of patients in each outpatient setting who underwent a procedure in the 48 hour period surrounding the encounter date was also evaluated. Urgent colectomy was performed in 1.2% of ER patients compared to 0.4% of Clinic patients ($p=.07$). Although infrequent among all patients, ER patients were more likely than Clinic patients to require colostomy (1.2% vs. 0.2%, $p<.01$) or abscess drainage (1.2% vs. 0.3%, $p=.01$).

Laboratory data became available through the electronic medical record for various UWHC and UWMF clinics beginning in 2006. Of the 36 ER patients and 315 Clinic patients who had laboratory values identified, the mean WBC count was significantly higher among patients evaluated in the ER compared to those seen in Clinic (12.5 K/ μ L vs. 9.9 K/ μ L, $p<.0001$). Mean hematocrit was lower among ER patients (39.9% vs. 41.5%, $p=.03$), but mean creatinine values did not differ by encounter location (1.08 mg/dL vs. 0.96 mg/dL, $p=.19$). Figure 2 displays the proportion of patients in each outpatient setting who had abnormal lab values recorded. Emergency room patients more frequently had abnormal WBC values identified (69%) compared to Clinic patients (35%, $p<.001$).

Inpatient admission within 24 hours was identified for those patients with an outpatient encounter included in our analysis. Of patients evaluated in the ER, 30% were hospitalized for diverticulitis within 24 hours of their outpatient visit, compared to 3.5% of Clinic patients ($p<.0001$).

DISCUSSION

This report identifies patients in a state-wide medical system presenting with diverticulitis in the outpatient setting, and describes the evaluation utilized by providers to support that diagnostic label. These results begin to address several knowledge deficits in understanding the outpatient portion of the diverticulitis spectrum, as prior study has been limited to hospitalized patients or anecdotal evidence from outpatient providers.[4,7,12–15] The current analysis identified more than 2500 unique outpatient encounters for diverticulitis within a 5 year period, the great majority of which were in a clinic setting, rather than the emergency room. By comparison, we noted a total of 820 inpatient visits for diverticulitis in the same time period, far less than the number of outpatient encounters. With a lack of similar prior published reports, it is impossible to determine if this is comparable to the experience of other medical systems. However, given that only one diverticulitis episode per patient was included to ensure independence in this analysis, these counts are likely to underestimate the true number of visits initiated in the outpatient setting. As one considers the potential number of repeat outpatient visits and associated resources utilized (imaging, laboratory tests, medications etc), not to mention often-overlooked patient factors, such as time lost from work and decreased quality of life due to symptoms, the probable burden of diverticulitis on the health care system becomes quite large. Data from a U.S. survey conducted in 1980 attributed \$300 million in annual health care costs to diverticular disease, yet this figure still primarily reflects those costs generated in the inpatient setting.[16,17] The impact of the outpatient aspect of this disease process has not been estimated until this analysis, and even this crude measure indicates that the resource drain on providers, patients, and the health care system itself is likely to be quite substantial.

Current practice guidelines state that the diagnosis of diverticulitis may be made on clinical grounds alone, and that imaging should be used in select patients with severe or atypical symptoms as confirmatory tests.[9–11] Indeed, the only study which specifically reports attributes and outcomes of “office practice” patients with diverticulitis dates back to the 1950’s

and identified patients exclusively through clinical features including abdominal pain, fever, and leukocytosis.[7] Our analysis focused on the objective measures of abdominal imaging and leukocytosis, due to data limitations preventing assessment of more subjective elements such as pain. We found that, despite being labeled with the ICD-9-CM code for diverticulitis, the overwhelming majority of patients seen in a clinic setting (86%) did not undergo abdominal imaging. In addition, for those with laboratory values recorded in the EMR, most Clinic patients (65%) did not have an abnormal WBC count. The patterns observed in this analysis imply that abdominal imaging and leukocytosis may not drive the diagnostic label of diverticulitis in the clinic setting. Instead, the diagnostic approach to patients presenting in Clinic with possible diverticulitis appears to be based on physical exam characteristics or other clinical evidence not captured in this analysis.

In contrast, patients seen in the emergency room frequently underwent abdominal imaging, especially CT scan. If outpatient practitioners are assumed to choose imaging in accordance with practice guidelines, this suggests that these patients were likely to have evidence of more severe disease, perhaps manifested by an elevated WBC count. However, leukocytosis was only observed in 69% of ER patients in this analysis. Thus, other factors, such as increased pressure to rule out confounding diagnoses and the ready availability of a variety of imaging modalities, likely contribute to the increased utilization of CT scans by ER practitioners. Although CT scan results were not reviewed during this analysis, the fact that all patients were labeled with diverticulitis suggests that the imaging findings were consistent with that diagnosis, and may have proved more influential to the provider's decision than a lack of elevated WBC count in some cases. Thus, in contrast to the clinic setting, CT scans appear to be a key component of the diagnostic workup for patients presenting with presumed diverticulitis in the ER setting. Leukocytosis does not appear to be essential for diagnosis in either setting, as a significant proportion of patients were found to have normal WBC counts. This is in contrast to published practice guidelines, which indicate that leukocytosis is critical to the clinical diagnosis of diverticulitis, especially in the absence of abdominal imaging.[7–11]

While clinical assessment alone may be sufficient for successful medical management of diverticular disease, and potentially more economical in the short-run, the lack of objective evidence, particularly imaging, is likely to raise concerns and questions should this patient be referred for surgical evaluation and treatment. Most surgeons hesitate to offer an elective operation to a patient whose prior diverticulitis episodes have no confirmatory imaging. The current findings reveal that a substantial number of patients, especially those evaluated in an outpatient clinic, do not receive such imaging as part of their diagnostic workup. By extension, these patients may not be strongly considered for elective colectomy upon initial referral for surgical consultation. While the cost-effectiveness of abdominal imaging for outpatient presentations of diverticulitis is not addressed in this study, the large proportion of patients diagnosed without imaging suggests that such an analysis will be important for future studies investigating the optimal outpatient management of this disease.

Urgent surgical intervention was rarely needed in our study population, with fewer than 2% of all patients requiring colectomy or abscess drainage in the 48-hour period surrounding diagnosis. This has been suggested previously, as large cohort studies have demonstrated successful non-operative management of acute diverticulitis in approximately 80% of hospitalized patients.[18,19] Low rates of emergent operation are expected in the present study, given the less severe disease presentation anticipated in this cohort of outpatients. Inpatient admission rates within 24 hours following outpatient presentation were similarly low, with 30% of ER patients and 3.5% of Clinic patients requiring hospitalization after the encounter of interest. Early admissions were likely initiated for a trial of conservative medical therapy, including intravenous antibiotics, as rates of colectomy within 24 hours of the initial encounter

are low. These findings suggest that while diverticulitis in the outpatient setting may be typically considered “uncomplicated” due to the rare need for emergent operation, a subset of patients will require more aggressive medical therapy on the basis of their clinical presentation. Further, as this analysis is limited to examining one outpatient episode and one subsequent inpatient episode, the full extent of the financial and quality of life burdens incurred by outpatients due to recurrence is assuredly underestimated. Although unique medical record numbers were available for all patients, investigation of recurrence events requiring ER evaluation or hospitalization beyond 24 hours was not reliably possible, due to potential losses-to-follow-up as patients might be anticipated to seek urgent or emergent care in facilities not affiliated with our medical system. A more in-depth evaluation as to the recurrence patterns of outpatient diverticulitis will, therefore, be crucial in making optimal management and treatment decisions for these patients, and should be taken into consideration in future analyses.

There are some limitations to this study. Implementation and adoption of the electronic medical record (EMR) has been an ongoing process in our medical system throughout the study period. Use of the EMR may create particular challenges related to missing data, as the absence of a test or other variable of interest may either indicate that the test was never ordered, or that the test results were simply not recorded in the EMR. This is especially true for laboratory data, as clinics have only adopted electronic reporting of results in recent years. Manual chart abstraction could be used to clarify the implications of missing data in future studies, but was not implemented in this analysis. In addition, this EMR-based analysis is limited to variables with discrete coding, and excludes information found in free-text format (i.e. finding of abdominal tenderness during the physical exam) due to the difficulty of exact matches, and thus may not fully capture all clinically relevant elements characterizing the patients seen in various outpatient settings. Finally, this retrospective EMR analysis relies on ICD-9-CM diagnosis codes to identify patients with diverticulitis. Although we presume that this diagnosis is correctly given, the accuracy is unknown, as validated studies on the identification of diverticulitis patients are lacking, and will therefore be the impetus of future study.

In conclusion, this analysis describes the subpopulation of diverticulitis patients presenting in the outpatient setting and the extent to which objective data (abdominal imaging and WBC count) contributes to making this diagnosis. In our medical system, patients labeled with diverticulitis are more commonly seen in an outpatient setting, and rarely require urgent surgical intervention or admission. Consistent with practice guidelines, abdominal CT scans are infrequently used in Clinic patients; in contrast, leukocytosis (when identified) is often absent. Thus, many outpatients are labeled with diverticulitis despite a lack of objective evidence, suggesting that other clinical factors persuade provider decision-making in this setting. These results motivate further investigation into the diagnostic criteria for diverticulitis, as accurate definition of this condition will be essential to answer remaining questions regarding the frequency and timing of recurrence, the influence of elective or emergent surgical management, and the quantifiable impact of outpatient diverticulitis on health care costs and patient quality of life.

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References

1. Hughes LE. Postmortem survey of diverticular disease of the colon. I. Diverticulosis and diverticulitis. *Gut* 1969 May;10(5):336–44. [PubMed: 5771665]
2. Parks TG. Natural history of diverticular disease of the colon. *Clin Gastroenterol* 1975 Jan;4(1):53–69. [PubMed: 1109820]
3. Welch CE, Allen AW, Donaldson GA. An appraisal of resection of the colon for diverticulitis of the sigmoid. *Ann Surg* 1953 Sep;138(3):332–43. [PubMed: 13080959]
4. Parks TG. Natural history of diverticular disease of the colon. A review of 521 cases. *Br Med J* 1969 Dec 13;4(5684):639–42. [PubMed: 5359917]
5. Heise CP. Epidemiology and pathogenesis of diverticular disease. *J Gastrointest Surg* 2008 Aug;12(8):1309–11. [PubMed: 18278535]
6. Stollman N, Raskin JB. Diverticular disease of the colon. *Lancet* 2004 Feb 21;363(9409):631–9. [PubMed: 14987890]
7. Horner J. A study of diverticulitis of the colon in office practice. *Gastroenterology* 1952 Jun;21(2):223–9. [PubMed: 14937207]
8. Wong WD, Wexner SD, Lowry A, et al. Practice parameters for the treatment of sigmoid diverticulitis--supporting documentation. The Standards Task Force. The American Society of Colon and Rectal Surgeons. *Dis Colon Rectum* 2000 Mar;43(3):290–7. [PubMed: 10733108]
9. Rafferty J, Shellito P, Hyman NH, Buie WD. Practice parameters for sigmoid diverticulitis. *Dis Colon Rectum* 2006 Jul;49(7):939–44. [PubMed: 16741596]
10. Stollman NH, Raskin JB. Diagnosis and management of diverticular disease of the colon in adults. Ad Hoc Practice Parameters Committee of the American College of Gastroenterology. *Am J Gastroenterol* 1999 Nov;94(11):3110–21. [PubMed: 10566700]
11. Salzman H, Lillie D. Diverticular disease: diagnosis and treatment. *Am Fam Physician* 2005 Oct;72(7):1229–34. [PubMed: 16225025]
12. Etzioni DA, Mack TM, Beart RW Jr, Kaiser AM. Diverticulitis in the United States: 1998–2005: changing patterns of disease and treatment. *Ann Surg* 2009 Feb;249(2):210–7. [PubMed: 19212172]
13. Chautems RC, Ambrosetti P, Ludwig A, Mermillod B, Morel P, Soravia C. Long-term follow-up after first acute episode of sigmoid diverticulitis: is surgery mandatory?: a prospective study of 118 patients. *Dis Colon Rectum* 2002 Jul;45(7):962–6. [PubMed: 12130887]
14. Salem L, Anaya DA, Flum DR. Temporal changes in the management of diverticulitis. *J Surg Res* 2005 Apr;124(2):318–23. [PubMed: 15820264]
15. Salem TA, Molloy RG, O'Dwyer PJ. Prospective, five-year follow-up study of patients with symptomatic uncomplicated diverticular disease. *Dis Colon Rectum* 2007 Sep;50(9):1460–4. [PubMed: 17431721]
16. Delvaux M. Diverticular disease of the colon in Europe: epidemiology, impact on citizen health and prevention. *Aliment Pharmacol Ther* 2003 Nov;18(Suppl 3):71–4. [PubMed: 14531745]
17. United States Department of Health Education and Welfare. United States Department of Health Education and Welfare. DHEW publication no. NIH-79. Vol. 4. Washington DC: Government Printing Office; 1987. Report to the Congress of the United States of the National Commission on Digestive Diseases.
18. Broderick-Villa G, Burchette RJ, Collins JC, Abbas MA, Haigh PI. Hospitalization for acute diverticulitis does not mandate routine elective colectomy. *Arch Surg* 2005 Jun;140(6):576–81. discussion 81–3. [PubMed: 15967905]
19. Anaya DA, Flum DR. Risk of emergency colectomy and colostomy in patients with diverticular disease. *Arch Surg* 2005 Jul;140(7):681–5. [PubMed: 16027334]

Figure 1. Imaging Obtained by Outpatient Encounter Location

Proportion of patients seen in the Emergency Room (ER) or Clinic undergoing abdominal imaging within the 48 hour period surrounding the encounter of interest is presented. Comparisons were made with χ^2 tests, using 2-sided p-values at the 0.05 level for significance. Abd/Pelvic CT, abdominal/pelvic computed tomography scan; Abd XR, abdominal x-ray.

Figure 2. Abnormal Laboratory Test Results by Outpatient Encounter Location

Patients seen in the Emergency Room (ER) or Clinic with a diagnosis of diverticulitis between 2/15/2006 and 10/16/2008 were eligible for review of laboratory data in the electronic medical record. Proportion of patient seen in each location who had abnormal results defined by local laboratory reference ranges is presented. Comparisons were made with χ^2 tests, using 2-sided p-values at the 0.05 level for significance. WBC, white blood cell.

Table 1

Diagnostic and Procedure Codes

ICD-9-CM Codes^a	
Diverticulitis	562.11, 562.13
CPT Codes^b	
<i>Imaging</i>	
Abdominal/pelvic CT scan	74150, 74160, 74170, 72192, 72193, 72194
Abdominal xray	74000, 74010, 74020, 74022
<i>Procedures</i>	
Colectomy	44140, 44141, 44143, 44144, 44145, 44146, 44204, 44005, 44206, 44207, 44208
Colostomy	44320, 44188
Abscess drainage	49020, 49021, 49060, 49061, 49423, 49424

^aInternational Classification of Disease, 9th Edition, Clinical Modification

^bCurrent Procedural Terminology

Table 2

Descriptives of Diverticulitis Cases by Outpatient Encounter Location (n=2576)

Characteristic	ER n=328 (13%)	Clinic n=2248 (87%)	p-value
Mean Age (years)	56.2	60.0	<.0001
Male (%)	53.1	44.8	0.02
Co-Morbid Condition (%)			
Any Co-Morbid Condition	23.8	12.4	<.0001
Diabetes	3.7	3.4	0.77
COPD/Asthma	3.0	2.5	0.59
Renal Failure	18.6	5.4	<.0001
Rheumatoid Conditions	1.8	2.4	0.49

Patients with an encounter for diverticulitis were identified in two outpatient locations: Emergency Room (ER) and Clinic. Mean age, proportion of males, and frequency of co-morbid conditions are presented for each group. Comparisons were made with χ^2 and one-sided ANOVA tests, using 2-sided p-values at the 0.05 level for significance