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A national evaluation of the management practices of acute diverticulitis

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ABSTRACT

Introduction: Diverticulitis is a common surgical admission that presents with a wide range of symptoms and severity. Overall there has been a shift to conservative management practices, including the consideration of non-antibiotic treatment approaches in select cases.

Methods: A national survey of all consultant surgeons evaluating their practices was performed. Reasons for changes in management, use of radiological imaging, role of non-antibiotic treatment approaches and indications for elective surgical management were evaluated.

Results: Response rate for this survey was 67.7% (n = 67/99). An overwhelming 92.5% stated that computed tomography imaging was routinely used to investigate acute presentations. Interestingly, 22.4% stated they would consider a non-antibiotic treatment approach in uncomplicated diverticulitis. Main reasons for adopting this approach was low inflammatory markers with short duration of symptoms. Co-amoxiclav was the most common antibiotic used for acute diverticulitis, with considerable variability in duration of treatment. Additionally, there was considerable heterogeneity regarding how many recurrences were necessary before surgical management was required.

Conclusion: This review highlights substantial variation in the management of diverticulitis across Ireland. Shifts to non-antibiotic treatment approaches for uncomplicated cases are observed, but less so than in Northern Europe. National guidelines are required to establish uniform treatment protocols including indications for surgical resection.

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Introduction

Diverticular disease represents a heterogeneous condition that accounts for one of the most common acute surgical

admissions.¹ The prevalence of diverticular disease is increasing globally, affecting approximately one-third of people over 45 years of age and more than two-thirds of people over 85 years of age.² An estimated 10–20% of symptomatic patients have at least one attack of acute diverticulitis

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over their lifetime.³ Traditionally, all cases of acute diverticulitis are managed in the hospital setting and therefore represents an area of considerable healthcare spending. Studies have observed that the financial cost of managing acute diverticulitis in the United States of America is the fifth highest of all gastrointestinal diseases, with an estimated annual expenditure of both direct and indirect costs of over 2.6 billion dollars.^{4–6}

The majority of acute diverticulitis cases (75%) are uncomplicated (Hinchey 1a/b).⁷ The natural history and clinical course of acute diverticulitis is now better defined. This has been largely due to more accurate classification of acute attacks with the increased usage of computed tomography (CT) imaging.⁸ Concordantly, with improvements in diagnosis and severity classification of acute diverticulitis, there has also been a shift in management practices. Conservative (non-operative) management approaches have become the mainstay of treatment, while reserving surgical management in selected cases.⁹ This is largely due to more recent evidence showing that morbidity and mortality rates following emergency (resectional) surgery are substantial when compared to more conservative approaches.^{10,11} A consensus is emerging whereby invasive surgical procedures are reserved for those that fail medical/conservative management or have diffuse peritonitis on initial presentation.¹²

However, there remains considerable heterogeneity regarding treatment of mild and moderate acute diverticulitis cases, with continued debate regarding indications for elective surgery. Furthermore, recent evidence (DIVER Trial) has contended that the overall majority of simple uncomplicated acute diverticulitis (97%) can be managed on an outpatient basis, with significant healthcare savings.^{13,14} Furthermore, the AVOD study observed that there is no outcome difference or increased complication rates in those patients with CT confirmed acute diverticulitis that are treated with supportive care without antibiotic use.¹⁵ This evidence was further supported by a Cochrane review published in 2012.¹⁶ All these advances in the management of acute diverticulitis have therefore resulted in considerable variation in surgical practices. The aim of this study was to conduct a national review of the current practices of general surgical consultants in Ireland regarding management approaches to acute diverticulitis and to highlight factors that may influence clinical practices.

Methods

A national cross-sectional study was carried out to evaluate the current management practices and strategies for the treatment of acute diverticulitis by general surgeons across the Republic of Ireland. Consultant surgeons were identified from the specialist register of the Irish Medical Council, and listed as general surgeons with a regular emergency commitment. The sample group represented all models of healthcare institutions that provided acute general surgical care. Additionally, the entire sample group is currently employed within the Irish public health service.

A multiple-choice questionnaire was sent to all general surgical consultants via standard mail and electronically online via Monkey Survey[®]. Surgeons were asked to state if

patients presenting to the emergency department with symptoms suggestive of acute diverticulitis, proceed to have computed tomography (CT) scanning of the abdomen/pelvis in the majority of cases. In addition, we evaluated whether surgeons have adopted a 'no antibiotic' policy for patients with confirmed uncomplicated acute diverticulitis. We assessed various factors that influence consultant surgeons to adopt a non-antibiotic approach. We also explored what factors result in individual consultants continuing to use antibiotics in all cases of acute diverticulitis, regardless of severity. Consultants were asked to state which antibiotics (regimens) they commonly administered and for how long in cases of both uncomplicated and complicated acute diverticulitis. Finally, indications for operative management, frequency and recurrences including the time interval was noted.

Due to the anonymous nature of the survey, participants' demographics including age, gender or regional variation could not be assessed. All data were collected in a specific database and analyzed by the authors. Analysis was performed using Microsoft[®] Excel software.

Results

There were 99 general surgical consultants identified, with a 67.7% ($n = 67$) response rate for the study. 92.5% ($n = 62$) of respondents stated that CT was routinely used to investigate those patients presenting with signs and symptoms of acute diverticulitis.

When surveyed on whether antibiotics were required in cases of CT-confirmed simple uncomplicated acute diverticulitis, 77.6% ($n = 52$) stated that they administered antibiotics. The remaining 22.4% ($n = 15$) stated they would consider a non-antibiotic treatment approach in uncomplicated diverticulitis.

Reasons for considering a non-antibiotic approach

The two main reasons identified by those surgeons that have changed or would consider a non-antibiotic approach in the management of simple uncomplicated acute diverticulitis includes; low inflammatory (CRP/WCC) marker counts at time of admission and short duration of symptoms (Table 1).

Reasons for continued use of a conservative antibiotic approach

Main concerns cited by consultants for the continued use of antibiotics in all cases of acute diverticulitis, despite CT findings are outlined in Table 2. The three most frequent reasons included; diverticulitis is an infective process and therefore requires antibiotics (84%), to prevent further complications (perforation/peritonitis) (75%) and the clinically-held belief that antibiotic treatment hastens resolution (69%).

Choice and length of antibiotic treatment course

Co-amoxiclav was the most common antibiotic used for the management of acute diverticulitis as first-line, but combination regimens were also popular (Fig. 1). The median (range)

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