

Copyright note

This document is a self-archived version of the paper entitled “Diverticular disease in a primary care setting”, published in Journal of Clinical Gastroenterology.
The document is post-print, i.e., final draft post-refereeing.

Reference to final publication:

Wensaas KA, Hungin APS. Diverticular disease in a primary care setting. J Clin Gastroenterol 2016;50:S86–S88. DOI: [10.1097/MCG.0000000000000596](https://doi.org/10.1097/MCG.0000000000000596)

Knut-Arne Wensaas (first author)

Bergen, 02.10.2017

Diverticular disease in the primary care setting

Knut-Arne Wensaas, Ph.D., post doctor

Research Unit for General Practice, Uni Research Health, Bergen, Norway

A Pali S Hungin, Professor

School of Medicine, Pharmacy and Health, Durham University, UK

Corresponding author:

Knut-Arne Wensaas

Research Unit for General Practice, Uni Research Health

Kalfarveien 31, 5018 Bergen, Norway

Fax number: +47

Telephone number: 047 911 04 774

e-mail: knut-arne.wensaas@uni.no

Disclosures

KAW has no conflicts of interest to declare. APSH has received research funding, travel costs and advisory board fees from Reckitt Benckiser, Johnson and Johnson, Danone and Allergen and is the Chair of the Rome Primary Care Committee.

Word count: 1562

Abstract: 233

Abstract

Diverticular disease is a chronic and common condition, and yet the impact of diverticular disease in primary care is largely unknown.

The diagnosis of diverticular disease relies on the demonstration of diverticula in the colon, and the necessary investigations are often not available in primary care. The specificity and sensitivity of symptoms, clinical signs and laboratory tests alone are generally low and consequently the diagnostic process will be characterized by uncertainty. Also, the criteria for symptomatic uncomplicated diverticular disease in the absence of macroscopic inflammation are not clearly defined. Therefore both the prevalence of diverticular disease and the incidence of diverticulitis in primary care are unknown.

Current recommendations for treatment and follow-up of patients with acute diverticulitis are based on studies where the diagnosis has been verified by computerized tomography. The results cannot be directly transferred to primary care where the diagnosis has to rely on the interpretation of symptoms and signs. Therefore, one must allow for greater diagnostic uncertainty, and safety netting in the event of unexpected development of the condition is an important aspect of the management of diverticulitis in primary care.

The highest prevalence of diverticular disease is found among older patients, where multimorbidity and polypharmacy is common. The challenge is to remember the possible contribution of diverticular disease to the patient's overall condition and to foresee its implications in terms of advice and treatment in relation to other diseases.

Key words: diverticular disease; diverticulitis; general practice, primary care

Introduction

Primary care is the first port of call for patients with any health problem unless it is an emergency and the patient may present to the hospital directly. Diverticular disease is a chronic and prevalent condition and therefore essentially a primary care problem. Yet, the impact of chronic diverticular disease in general practice is largely unknown. This is because we lack reliable data on the epidemiology of diverticular disease in primary care, and because similar symptoms and presentations cannot easily be separated from other conditions in the relevant age groups.

In this paper we discuss the epidemiology, diagnosis, treatment and follow up of diverticular disease from a primary care perspective at the European level.

The characteristics of primary care

General practice is characterized by continuity where the general practitioners (GPs) provide personalized care and coordinated services and management for a range of conditions. The area of responsibility is comprehensive in many dimensions as patients present with varying symptoms at different stages of a disease, and with different conditions, both serious and benign.

Primary care plays different roles in health care systems across Europe as their organization and resources available vary. This has implications when discussing the impact of diverticular disease in primary care. In some countries, like the Netherlands and the Scandinavian countries, GPs will be the first port of call for all kinds of health problems and they will act as gatekeepers to secondary care, referring patients based on their clinical assessment. With very few exceptions GPs in these countries will not perform endoscopies beyond anoscopy or rigid sigmoidoscopy. In the UK some GPs with an interest in gastroenterology undergo special training and allocate part of their time to endoscopy. In some countries such as Italy some

GPs have formal specialization in gastroenterology and work as primary care gastroenterologists. Their role is similar to that of gastroenterologists in other countries working in secondary care.

Here we discuss the management of diverticular disease in settings where the GP is not specialized in gastroenterology and does not have immediate access to colonoscopy or radiographic imaging.

Epidemiology of diverticular disease

Diverticular disease is the symptomatic condition related to the presence of diverticula in the colon. The prevalence of diverticula increases with age, with approximately 30% affected by the age of 50 years and 70% by 80 years [1]. The clinical manifestations of diverticular disease will range from symptomatic uncomplicated diverticular disease (SUDD) to diverticulitis that can be uncomplicated or complicated (with abscess, fistula or perforation). Traditionally it has been postulated that 25% of people with diverticula will develop diverticulitis, but these figures have been questioned. Population-based cohort studies indicate an annual incidence in adults between 1 and 2%. Assuming a 50% prevalence of diverticulosis in this population the annual risk of developing diverticulitis is 2-4%. In a recent study of more than 2,000 patients with diverticulosis the overall cumulative incidence of hospitalization due to diverticulitis over 11 years was <5% [2].

Although diverticula are common isolated diverticular disease seems to be a rare condition in primary care. In Norway every consultation in general practice is coded according to the International Classification of Primary Care (ICPC-2). The diagnosis "Diverticular disease" is only reported in around 0.1% of GP consultations. This corresponds to an average of 2 or 3 consultations per GP a year, but these numbers should be considered a minimum. The diagnosis of diverticular disease is likely to be too specific for primary care and less specific

diagnoses like “abdominal pain” or “gastrointestinal symptoms” will include consultations due to diverticular disease.

The impact of diverticular disease cannot be seen isolated from other conditions. Patients often suffer from more than one disease, and multimorbidity increases with age. In the age group 65 to 84 years 65% of the population are have multimorbidities [3]. The ensuing problem of polypharmacy is of special relevance since there is good evidence that certain drugs, like nonsteroidal anti-inflammatory drugs, steroids and opioids, increase the risk of complications in patients with diverticular disease [4].

Diagnosis of diverticular disease in primary care

The two basic criteria required to make a diagnosis of diverticular disease are abdominal symptoms and the presence of diverticula. Abdominal symptoms are common and not always a sign of disease [5], and when investigating the patient there is a wide range of potential diagnoses to consider. Diverticular disease is not easily separated from other conditions based on symptoms and signs alone. Previous investigations may have confirmed the presence of diverticula, but a negative investigation cannot rule out the development of new diverticula, especially if there is a period of time since the patients was investigated.

The classic presentation of diverticular disease is pain, which is often intermittent, in the lower left abdomen. In symptomatic uncomplicated diverticular disease (SUDD) there is no clear abnormality of laboratory tests, although a slight increase in faecal calprotectin might be detected [6]. Patients often present with a range of gastrointestinal symptoms and there are no clear criteria defining the symptoms of diverticular disease from the symptoms of other conditions like irritable bowel syndrome. There are suggestions that SUDD and IBS differ in the characteristics of pain [7], but it could be argued that the clinical usefulness of a diagnosis

like SUDD is limited in primary care. Whether the symptoms will be diagnosed as SUDD, IBS or unspecific abdominal pain will often be arbitrary and based on the discretion of the clinician. This is also the case when a gastroenterologist has seen the patient. Some will diagnose diverticular disease in patients with IBS-like symptoms and the presence of diverticula, while others will simply consider the presence of diverticula a chance finding, make a diagnosis of IBS and report the presence of co-existing diverticula. These differences probably represent different trends between countries and regions, between research and clinical practice, and between primary and secondary care.

The diagnosis of diverticulitis is based on the presence of macroscopic inflammation, and computerized tomography (CT) or ultrasound is the recommended method to diagnose both uncomplicated and complicated disease [8]. An evidence based assessment of the sensitivity and specificity of symptoms, findings and laboratory tests is warranted for management outside the hospital. A study from the Netherlands found that the following variables were associated with diverticulitis: tenderness in the lower left abdomen (both as a symptom and on physical examination), aggravation of pain on movement, CRP ≥ 50 mg/L, and the absence of vomiting. However, the discriminating power of the different variables was generally low [9]. Several potential predictors of diverticulitis severity have been assessed. In a systematic review Tan et al found that complicated disease was more common in patients without previous episodes of diverticulitis, who had other co-morbidities, used non-steroidal anti-inflammatory drugs or corticosteroids, and presented with a CRP >200 mg/L [10]. They concluded that a CRP < 50 mg/L made perforation unlikely, but in a study of 200 patients with verified diverticulitis 12 out of 42 patients (29 %) with a CRP < 50 mg/L had complicated disease [11].

In clinical practice the management has to rely on the overall condition of the patient, co-morbidities, and how the patient can be monitored at home. If the patient is managed outside the hospital clear instructions must be given on how to approach the health care services should the condition worsen.

Treatment

Complicated diverticulitis may require emergency surgery and patients should therefore be treated in hospital. Uncomplicated diverticulitis has traditionally been treated with antibiotics, and several studies have shown that treatment in an out-patient setting is safe [12]. Recent studies have suggested that uncomplicated diverticulitis can be managed without antibiotic treatment in a hospital setting [13]. It is unclear how this may be transferred to primary care, since a CT scan verified the diagnosis in all patients. We suggest that if uncomplicated diverticulitis is suspected and the overall health condition of the patient is good the preferred management should be watchful expectation in primary care with scheduled reassessment based on physical examination and laboratory testing. Both CRP and faecal calprotectin are useful in monitoring the disease trajectory in diverticulitis [6].

Follow-up in primary care

There is no clear evidence on the effect of different drug treatments like antibiotics, probiotics or 5-aminosalicylates in preventing recurrent attacks of acute diverticulitis [14].

The risk of colorectal cancer in patients with acute diverticulitis is low, and there is good evidence in support of there being no need for routine colonoscopy following an episode of verified diverticulitis [15]. The assumptions that underlie these studies don't apply if symptoms consistent with diverticular disease have been managed in primary care without

radiographic imaging or endoscopy. The need for further investigations must therefore be assessed independently in each patient.

Conclusion

The prevalence of gastrointestinal problems in patients where diverticular disease might explain symptoms is substantial, but diagnostics and specific follow-up of diverticular disease is not normally a large part of the GP's workload. Diverticular disease is relevant in many settings, particularly as the highest prevalence is found in older patients, where multimorbidity, age related symptoms and reduced function is common.

Consequently, the major impact of diverticular disease will be as a co-existing condition in multimorbid and older patients, who will often use a range of different drugs. The challenge is to remember the possible contribution of diverticular disease to the patient's overall condition and to foresee its implications in terms of advice and treatment in relation to other diseases.

References

1. Everhart JE, Ruhl CE. Burden of digestive diseases in the United States part II: lower gastrointestinal diseases. *Gastroenterology*. 2009;136:741-754.
2. Strate LL, Modi R, Cohen E, et al. Diverticular disease as a chronic illness: evolving epidemiologic and clinical insights. *Am J Gastroenterol*. 2012;107:1486-1493.
3. Barnett K, Mercer SW, Norbury M, et al. Epidemiology of multimorbidity and implications for health care, research, and medical education: a cross-sectional study. *Lancet*. 2012;380:37-43.
4. Kvasnovsky CL, Papagrigroriadis S, Bjarnason I. Increased diverticular complications with nonsteroidal anti-inflammatory drugs and other medications: a systematic review and meta-analysis. *Colorectal Dis*. 2014;16:O189-196.
5. Hungin AP, Paxman L, Koenig K, et al. Prevalence, symptom patterns and management of episodic diarrhoea in the community: a population-based survey in 11 countries. *Aliment Pharmacol Ther*. 2016;43:586-595.
6. Tursi A. Biomarkers in diverticular diseases of the colon. *Dig Dis*. 2012;30:12-18.
7. Tursi A, Papa A, Danese S. Review article: the pathophysiology and medical management of diverticulosis and diverticular disease of the colon. *Aliment Pharmacol Ther*. 2015;42:664-684.
8. Fozard JB, Armitage NC, Schofield JB, et al. ACPGIBI position statement on elective resection for diverticulitis. *Colorectal Dis*. 2011;13(Suppl 3):1-11.
9. Andeweg CS, Knobben L, Hendriks JC, et al. How to diagnose acute left-sided colonic diverticulitis: proposal for a clinical scoring system. *Ann Surg*. 2011;253:940-946.
10. Tan JP, Barazanchi AW, Singh PP, et al. Predictors of acute diverticulitis severity: A systematic review. *Int J Surg*. 2016;26:43-52.

11. Makela JT, Klintrup K, Rautio T. The role of low CRP values in the prediction of the development of acute diverticulitis. *Int J Colorectal Dis.* 2016;31:23-7.
12. Jackson JD, Hammond T. Systematic review: outpatient management of acute uncomplicated diverticulitis. *Int J Colorectal Dis.* 2014;29:775-781.
13. Boermeester MA, Humes DJ, Velmahos GC et al. Contemporary Review of Risk-Stratified Management in Acute Uncomplicated and Complicated Diverticulitis. *World J Surg.* 2016;May 20 [Epub ahead of print]
14. Humes DJ, Spiller RC. Review article: The pathogenesis and management of acute colonic diverticulitis. *Aliment Pharmacol Ther.* 2014;39:359-370.
15. Sharma PV, Eglinton T, Hider P, et al. Systematic review and meta-analysis of the role of routine colonic evaluation after radiologically confirmed acute diverticulitis. *Ann Surg.* 2014;259:263-272.