Scandinavian Journal of Primary Health Care

ISSN: 0281-3432 (Print) 1502-7724 (Online) Journal homepage: https://www.tandfonline.com/loi/ipri20

Abdominal complaints in general practice Diagnoses and characteristics of patients

Per Olav Vandvik, Pål Kristensen, Lars Aabakken & Per G. Farup

To cite this article: Per Olav Vandvik, Pål Kristensen, Lars Aabakken & Per G. Farup (2004) Abdominal complaints in general practice Diagnoses and characteristics of patients, Scandinavian Journal of Primary Health Care, 22:3, 157-162, DOI: 10.1080/02813430410006503

To link to this article: https://doi.org/10.1080/02813430410006503

Taylor&Francis
healthsciences

Abdominal complaints in general practice

Diagnoses and characteristics of patients

Per Olav Vandvik[1], Pål Kristensen[2], Lars Aabakken[3] and Per G. Farup[1,4]

[1]Department of Medicine, Innlandet Hospital Health Authority, Gjøvik, [2]Ranheim Medical Centre, Trondheim, [3]Department of Medicine, Rikshospitalet University Hospital, Oslo, [4]Unit for Applied Clinical Research, NTNU, Trondheim, Norway.

Scand J Prim Health Care 2004;22:157–162. ISSN 0281-3432

Objective **– The study evaluates the prevalence and diagnoses of abdominal complaints in general practice, and compares characteristics and symptoms of patients with functional gastrointestinal disorders (FGIDs) and organic diseases.**
Design **– A cross-sectional study.**
Setting **– Nine centres with 26 participating general practitioners (GPs) in Norway.**
Subjects **– 3097 out of 3369 consecutive adult patients answered a questionnaire regarding abdominal complaints within the last 3 months. Those who consulted for the complaints were eligible for this study.**
Main outcome measures **– The GPs' diagnoses and patients' characteristics were reported in questionnaires.**
Results **– 460 out of 1499 patients with abdominal complaints consulted for these complaints; 392 were included in this study. The GPs diagnosed a FGID in 167 (42.6%) patients, organic disease in 145 (37.0%), and made no diagnosis in 80 (20.4%). Stress-related symptoms were a statistically significant predictor of a FGID (OR 1.95) and weight loss predicted in addition organic disease (OR 2.7) in 128 patients with a verified diagnosis.**
Conclusion **– Abdominal complaints are a common problem in general practice. The distinction between FGID, which accounted for half of the diagnoses, and organic disease was difficult. The only significant predictor for FGID was stress-related symptoms.**

Key words: **diagnoses, functional gastrointestinal disorders, gastrointestinal diseases, general practice.**

Per Olav Vandvik, Department of Medicine, Innlandet Hospital Health Authority, Kyrre Greppsgt. 11, NO-2819 Gjøvik, Norway. E-mail: per.vandvik@ start.no

Most patients with abdominal complaints are diagnosed and treated in general practice, where such problems account for 7–10% of the consultations (1,2). At least half of these consultations are for functional gastrointestinal disorders (FGIDs), such as irritable bowel syndrome (IBS) and functional dyspepsia (1,2). Since the FGIDs and the organic diseases are in large part handled differently, the GP must consider at an early stage which of them is most likely. This distinction is important for selection of further investigations or referral to secondary care, and for correct treatment. There is little knowledge on how to make this distinction based on symptoms alone (3,4). It is likely that GPs, who often are unfamiliar with the use of strict diagnostic criteria for FGIDs, use other characteristics than merely the abdominal symptoms to separate FGIDs and organic disease (1,3). Increased knowledge about characteristics in patients with FGIDs and organic diseases could help the GPs to a correct diagnosis.

This study investigates the prevalence of abdominal complaints in general practice and the spectrum of diagnoses made by GPs, and compares characteristics of patients diagnosed with FGIDs with those diagnosed with organic diseases.

MATERIAL AND METHODS

The study was carried out in the county of Oppland, which comprises 110 000 inhabitants served by 99 GPs and one hospital. In Norway, patients must seek medical care through their locally assigned GP. In all 26 GPs, working in 9 (out of 12 invited) general practices of varying sizes, participated in the study. Two practices were located in a town with 18 000 inhabitants, 7 were located in the countryside. The study period was from February to April 2001, during

Most patients with abdominal complaints are managed by their GP. A correct distinction between functional disorders and organic diseases is necessary.

- Consultations for abdominal complaints constituted a significant workload for GPs.
- Functional disorders were diagnosed as frequently as organic diseases.
- Patients with functional disorders and organic diseases displayed apparently similar characteristics, which made this distinction a challenge for the GP.

10 days of practice for each participating GP. Members of the practice staff were responsible for administration of questionnaires. GP characteristics such as age, sex, professional experience, and knowledge of diagnostic criteria for FGID were recorded.

Consecutive patients aged 18 years or older consulting their GPs were asked to complete a brief questionnaire in the waiting room. This questionnaire assessed sex, age, presence of abdominal complaints within the past 3 months, and consultations for the complaints. Patients with abdominal complaints who wished to consult the GP the same day for these complaints (main or additional problem) were eligible for the study.

Patients who had given informed consent completed an additional questionnaire developed by the authors, regarding certain symptoms and characteristics. This questionnaire was administered on a palm-top computer. Patients were assisted by practice staff in completing the questionnaire, if necessary. The severity of abdominal pain/discomfort was measured as mild (no interference with daily activities), moderate (some interference, but not disruption of daily activities) and severe (with disruption of daily activities) and frequency of abdominal pain/discomfort as number of days per week with abdominal pain/ discomfort. Two questions assessed the patients' own opinion of stress and psychological factors as relevant to the abdominal complaints ("stress-related symptoms") and whether patients feared that the abdominal complaints could be due to cancer/other serious disease ("fear of cancer").

General practitioners' diagnosis

The GPs' diagnosis for the abdominal complaints was based on all available information about the patient, in accordance with daily practice. If the abdominal complaints had been sufficiently evaluated (known from earlier or evaluated during the current consultation) the GP reported the diagnosis on the palm-top computer. The GP had to choose one of three main categories (functional disorder, organic gastrointestinal disease, other disease) and thereafter one option within the chosen category. Since some of these diagnoses might have been provisional and therefore unreliable, the GPs were also asked whether the diagnosis was considered to be verified (meaning that, for the FGID, they had no evidence of organic disease, and for the organic diseases that tests had confirmed organic disease). The GPs also reported the number of previous visits for abdominal complaints during the last two years (0/1–5/>5).

Statistics

Differences in characteristics between groups were evaluated with chi-squared, MannWhitney U, and Student's t-tests and 95% confidence intervals (CI) were calculated if possible. A stepwise forward logistic regression analysis was performed to predict characteristics of patients with FGID and organic diseases. All variables with a p-value <0.20 in univariate analyses were entered in the model. The statistical analyses were carried out using SPSS for Windows v. 10.0, and StatXact v. 5.

Ethics

The study was performed according to the Declaration of Helsinki, and approved by the Regional Committee for Medical Research Ethics at the University of Oslo, and the Data Inspectorate, Oslo, Norway.

RESULTS

General practitioners and patients

Of the 26 participating GPs (20 M and 6 F, median age 45 years [range 26–68]), 15 were specialists in general practice and the median number of years in general practice was 10 (range 0–20). Three of 26 GPs knew of diagnostic criteria for FGID, but none applied such criteria regularly. Fig. 1 shows the flow chart of patients in the study. Of 460 patients with abdominal complaints for which they wanted to consult, 392 patients (147 M and 245 F) with mean age 52 years (SD 17.2, range 18–90) were further characterized in the electronic questionnaire. Duration of complaints for more than 1 year was reported by 290 patients (74%), and 273 (70%) had consulted their GP for abdominal complaints earlier. In 114 patients (30%) the abdominal pain/discomfort was mild, in 215 patients (56%) moderate, and 53 patients (14%) reported severe abdominal pain/discomfort. One hundred and fifty patients (38%) feared that the abdominal complaints could be due to cancer or other serious disease. There were no significant differences between men and women regarding these characteristics (data not shown).

GPs' diagnoses for the abdominal complaints

The GP reported a diagnosis in 312 patients; 128 had a diagnosis that was considered by the GP as verified. The proportion of verified diagnoses was significantly lower in patients with no previous visits for abdominal complaints during the last 2 years than in patients with 1 to 5 visits and in patients with more than 5 visits (25%/47%/52%, $p=0.001$). Table I shows the diagnoses in all patients and in those with a verified diagnosis. No diagnosis of malignant disease was made by the GPs in this study.

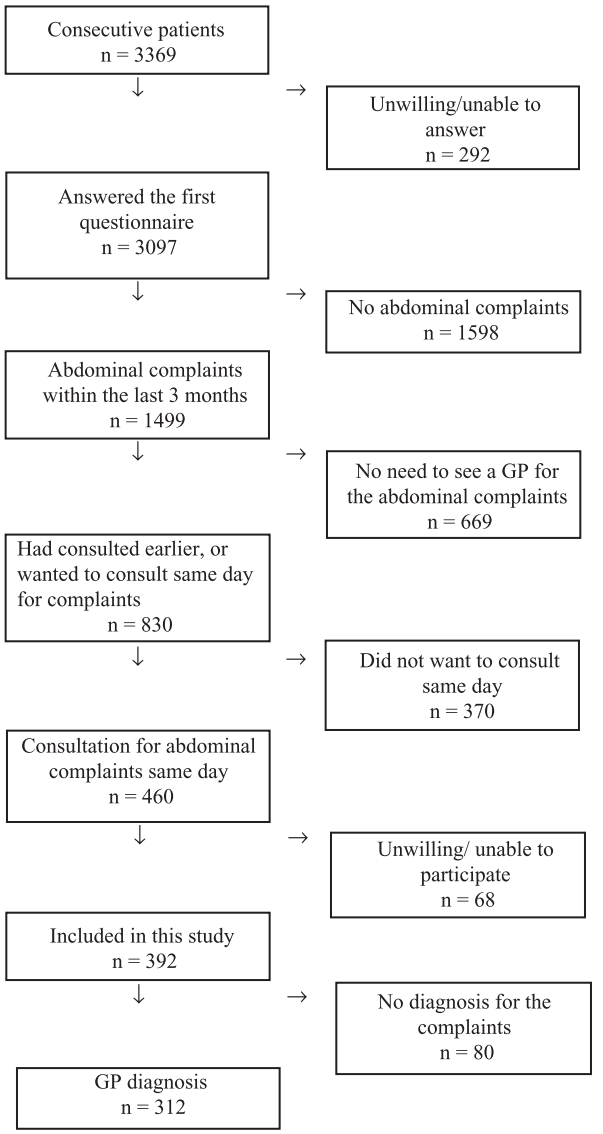

Fig. 1. Flow chart of patients in the study.

Comparison of patients with FGID and organic diseases

Table II shows the characteristics of patients (all patients and the subset with verified diagnoses) with FGID and organic diseases (both gastrointestinal and other diseases) and a comparison between the groups with univariate analyses. By logistic regression, "stress-related symptoms" predicted a diagnosis of FGID in all patients (OR 1.95, 95% CI: 1.24–3.1), and "stress-related symptoms" (OR 2.7, 95% CI: 1.25–5.6) and "no weight loss last year" (OR 2.7, 95% CI: 1.1–6.7) predicted FGID in patients with a verified diagnosis.

Table I. General pactitioners' diagnoses in all patients, and in patients with a verified diagnosis. Results are given as numbers and whole percentages.

Diagnosis	All patients	Patients with a verified diagnosis
No diagnosis	80 (20%)	0 (0%)
Functional gastrointestinal disorders	167 (43%)	50 (39%)
Functional reflux	12 (3%)	5 (4%)
Functional dyspepsia	20 (5%)	7 (5%)
IBS	52 (13%)	22 (17%)
Functional diarrhoea	14 (4%)	3 (2%)
Functional constipation	24 (6%)	7 (5%)
Functional bloating	17 (4%)	1 (1%)
Functional abdominal pain	20 (5%)	4 (3%)
Functional other	8 (2%)	1 (1%)
Benign organic gastrointestinal diseases	109 (28%)	61 (48%)
GERD/oesophagitis	41 (10%)	23 (18%)
Peptic ulcer disease	6 (2%)	5 (4%)
Infectious gastroenteritis	6 (2%)	1 (1%)
Small bowel disease	3 (1%)	2 (2%)
Food allergy/intolerance	2 (1%)	1 (1%)
Liver/biliary/pancreatic disease	9 (2%)	5 (4%)
Inflammatory bowel disease	5 (1%)	3 (2%)
Diverticulosis/diverticulitis	18 (5%)	12 (9%)
Ano-rectal disease	6 (2%)	4 (3%)
Adherences	7 (2%)	4 (3%)
Other gastrointestinal disease	6 (2%)	1 (1%)
Other diseases	36 (9%)	17 (13%)
Drug adverse event	17 (4%)	7 (5%)
Kidney/urinary disease	7 (2%)	4 (3%)
Gynaecologic disease	4 (1%)	3 (2%)
Psychiatric disease (in need of treatment)	8 (2%)	3 (2%)
Malignancies	0 (0%)	0 (0%)
Total	392 (100%)	128 (100%)

DISCUSSION

Main findings

In this general practice population, 14% wished to consult for abdominal complaints during the current consultation. This suggests a somewhat higher frequency of consultations than reported earlier (1,2). Although a common reason for consultation, the complaints seldom disrupted daily activities and a minority had consulted their GP more than 5 times during the last 2 years. Importantly, nearly half of the patients in this study feared that the abdominal complaints could be due to cancer or other serious disease. Such fear should be recognized by the GP, as it may have been the incentive to consult and has negative impact on the course of the abdominal complaints (1,4).

The GPs' diagnoses for the abdominal complaints represent a wide range of non-malignant disorders and diseases. Our study adds to the evidence that the FGIDs constitute a considerable workload for GPs, with IBS being the most frequent functional disorder (1,2).

Table II. Characteristics of patients with functional gastrointestinal disorders (FGID) and organic diseases, with differences between the groups. All values are expressed as percentages, if not otherwise indicated.

Characteristics	All patients with GP diagnosis			Patients with verified GP diagnosis		
	FGID n = 167	Organic n = 145	Statistics*	FGID n = 50	Organic n = 78	Statistics*
Females	65	62	3 (−7; 14)	73.5	73.1	0.4 (−16; 16)
Age in years (mean/SD)	52.6 (16.4)	53.2 (18)	0.8 (−4.7; 3)	54.1 (15.6)	53.1 (18.6)	0.75 (−5.3; 7.4)
Symptom duration >1 year	76	72	4 (−6; 13)	88	82	6 (−8; 17)
Symptom severity (mild/moderate/severe)	29/55/15	24/62/14	p = 0.51	20/67/12	26/62/12	p = 0.54
Symptom frequency (0–3/4–5/>5 days/week)	57/15/28	56/15/30	p = 0.35	59/16/25	55/15/30	p = 0.2
Stress-related symptoms	60	43	17 (5; 27)	64	42	22 (5; 39)
Fear of cancer/serious disease	42	37	5 (−6; 16)	36	35	1 (−18; 16)
Visits for complaints last 2 yrs (0/1–5/>5)	26/66/8	25/64/11	p = 0.51	12/78/10	18/69/13	p = 0.73
Alarm symptoms						
Weight loss last year	25	32	7 (−3; 17)	18	35	17 (1; 31)
Nocturnal symptoms	60	50	10 (−1; 21)	58	51	7 (−11; 24)
Observed blood in stools	16	18	2 (−6; 11)	18	17	1 (−11; 17)
Colon cancer in first-degree relatives	10	12	2 (−5; 9)	12	9	3 (−8; 17)
Milk-related symptoms	28	30	2 (−9; 12)	30	35	5 (−12; 21)

*Statistics are given as differences between groups with 95% confidence intervals, or with p-values.

We found, like others, that the GPs do not know or use strict symptom-based criteria to diagnose the FGID (1,3). How then do GPs distinguish between the FGIDs and organic diseases in daily practice? Our findings suggest that GPs often trust their clinical judgement without the need for verification by extensive tests or referrals, as only half of the diagnoses were considered verified even in the most frequent consulters. It is also likely that the GPs use other factors than merely abdominal symptoms to make a diagnosis for the complaints. In a general practice study from the UK, patients with IBS were more often women, feared cancer more often, attributed their complaints to stress, and consulted their GP more often compared with patients with organic disease (1). In our study, there were no significant differences between patients with FGID and organic diseases for these and other characteristics, except for "stress-related symptoms", which predicted FGID, and "weight loss last year", which predicted organic disease in those with a verified diagnosis. A recently published study shows that GPs often believe that symptoms in the FGID are related to psychological factors (3). It is also shown that denial of a role of stress in explaining abdominal symptoms predicts referral to specialists (1,5). We suggest that the GPs might use stress-related symptoms in distinguishing between functional disorders and organic disease. Whether stress-related symptoms play a greater role in the FGID than in organic diseases remains unclear.

Symptoms that may predict organic disease (alarm symptoms) are considered to be important in the diagnostic evaluation of patients with abdominal complaints. Guidelines for FGID define weight loss, blood in the stools, and nocturnal symptoms as alarm symptoms, which should lead to further investigations (6–8). However, the predictive values of alarm symptoms in patients with dyspepsia in primary care are questionable, and the decision on whether and how to investigate is complex (9,10). In our study, the only alarm symptom that predicted organic disease was "weight loss last year". This predictor was found only in those with a verified diagnosis. On the other hand, we fail to confirm that "observed blood in the stools" predicts organic disease. Two studies have shown that rectal bleeding is associated with cancer in general practice (11,12). However, one study of subjects with IBS found blood in the stools to be frequent and not associated with organic disease (13). Nocturnal symptoms were present in half of the patients, and more often in patients with FGID than in patients with organic disease (p = 0.07). One study has found nocturnal awakening to be associated with organic dyspepsia (14). Milk intolerance, defined as worsening of abdominal complaints by intake of milk products, was reported by one-third of the patients, suggesting lactose malabsorption (LM). However, the clinical value of detecting LM seems unclear (15–17).

Strengths and limitations

A particular strength of the study is the high participation rate among the patients (see Fig. 1)

and the design of the study, which allowed the GPs to perform their practice as usual. This should minimize the risk for selection bias and ensure that the GPs' diagnoses are representative of "real life" diagnoses. However, some limitations need to be considered. The observed proportion of patients who wished to consult for abdominal complaints may be an overestimate, as some of the patients might have been reminded about minor complaints that they wished to discuss with the GP in addition to the planned agenda for the consultation.

Another limitation of our study is the lack of a gold standard for the diagnosis of FGID and organic disease. It may be questioned whether the GPs' diagnoses identify patients with "true" functional disorders and organic diseases. It is also possible that organic diseases such as diverticulosis coexist with FGIDs such as IBS in some patients. Although it is likely that the FGIDs could have been better classified with the use of strict criteria, we have no reason to believe that the distinction between FGIDs and organic diseases is incorrect.

Since the sample size is limited and the confidence intervals are wide, clinically significant differences might have been missed (type II error). However, there was no trend towards any clinical significant differences apart from the reported predictors. Our selection of patient characteristics was limited, and did not include a thorough characterization of abdominal symptoms. Guidelines suggest that identification of the typical abdominal symptoms within the various FGID syndromes is the key to a correct and confident diagnosis (6–8,18). We do not know to what extent GPs use such characteristics in their daily practice, although we have shown that few use strict criteria.

The lack of predictive value for alarm symptoms (blood in stools, nocturnal symptoms, milk intolerance) in this study, except weight loss, should be interpreted with caution. For example, not all organic diseases are associated with blood in the stools, nocturnal symptoms, or hereditary factors. It is also possible that our simple questionnaire is likely to be less accurate than the detailed assessment of alarm symptoms by an experienced doctor. Interestingly, a recent review on the diagnosis of IBS suggests that alarm symptoms are suitable for use in questionnaires (19).

Conclusion and implications for future research

Abdominal complaints represent a significant workload and a diagnostic challenge in general practice. The similar characteristics in patients with FGIDs and organic diseases make this distinction difficult. Whether the typical symptoms defined by the criteria for FGID are more helpful in distinguishing patients with FGIDs from those with organic diseases should be evaluated.

ACKNOWLEDGEMENTS

The authors express their gratitude to the participating GPs and practice staff. The study was funded by an unrestricted grant from Glaxo Smith Kline, Norway and from a research fund at Innlandet Hospital Health Authority.

REFERENCES

1. Thompson WG, Heaton KW, Smyth GT, Smyth C. Irritable bowel syndrome in general practice: prevalence, characteristics, and referral. Gut 2000;46:78–82.
2. Kristensen P, Sandbakken P, Johannessen T, Løge I, Hafstad PE, Petersen H, et al. Gastrointestinal disorders in general practice. Tidskr Nor Lægeforen 1985;11:728–31.
3. Gladman LM, Gorard DA. General practitioner and hospital specialist attitudes to functional gastrointestinal disorders. Aliment Pharmacol Ther 2003;17:651–4.
4. Bleijenberg G, Fennis JF. Anamnestic and psychological features in diagnosis and prognosis of functional abdominal complaints: a prospective study. Gut 1989;30:1076–81.
5. Van der Horst HE, van Dulmen AM, Schellevis FG, van Eijk JT, Fennis JF, Bleijenberg G. Do patients with irritable bowel syndrome in primary care really differ from outpatients with irritable bowel syndrome? Gut 1997;41:669–74.
6. Thompson WG, Longstreth GF, Drossman DA, Heaton KW, Irvine EJ, Muller-Lissner SA. Functional bowel disorders and functional abdominal pain. Gut 1999;45 (Suppl 2):II43–7.
7. Dent J, Jones R, Kahrilas P, Talley NJ. Management of gastro-oesophageal reflux disease in general practice. BMJ 2001;322:344–7.
8. Jones J, Boorman J, Cann P, Forbes A, Gomborone J, Heaton K, et al. British Society of Gastroenterology guidelines for the management of the irritable bowel syndrome. Gut 2000;47(Suppl 2):ii1–19.
9. Meineche-Schmidt V, Jørgensen T. "Alarm symptoms" in patients with dyspepsia: A three year prospective study from general practice. Scand J Gastroenterol 2002;37:999–1007.
10. Meineche-Schmidt V, Jørgensen T. "Alarm symptoms" in dyspepsia. How does the general practitioner investigate? Scand J Prim Health Care 2003;21:224–9.
11. Wauters H, Van Casteren V, Buntinx F. Rectal bleeding and colorectal cancer in general practice: diagnostic study. BMJ 2000;321:998–9.
12. Helfand M, Marton KI, Zimmer-Gembeck MJ, Sox HC, Jr. History of visible rectal bleeding in a primary care population. Initial assessment and 10-year follow-up. JAMA 1997;277:44–8.
13. Talley NJ, Phillips SF, Melton LJ, Mulvihill C, Wiltgen C, Zinsmeister AR. Diagnostic value of the Manning criteria in irritable bowel syndrome. Gut 1990;31:77–81.
14. Stanghellini V, Anti M, Porro GB, Corinaldesi R, Gasbarrini G, Giacosa A, et al. Risk indicators of organic diseases in uninvestigated dyspepsia: a one- week survey in 246 Italian endoscopy units. Eur J Gastroenterol Hepatol 1999;11:1129–34.
15. Tolliver BA, Jackson MS, Jackson KL, Barnett ED, Chastang JF, DiPalma JA. Does lactose maldigestion really

play a role in the irritable bowel? J Clin Gastroenterol 1996;23:15–7.
16. Parker TJ, Woolner JT, Prevost AT, Tuffnell Q, Shorthouse M, Hunter JO. Irritable bowel syndrome: is the search for lactose intolerance justified? Eur J Gastroenterol Hepatol 2001;13:219–25.
17. Suarez FL, Savaiano DA, Levitt MD. A comparison of symptoms after the consumption of milk or lactose-hydrolyzed milk by people with self-reported severe lactose intolerance. N Engl J Med 1995;333:1–4.
18. Talley NJ, Spiller R. Irritable bowel syndrome: a little understood organic bowel disease? Lancet 2002;360:555–64.
19. Olden KW. Diagnosis of irritable bowel syndrome. Gastroenterology 2002;122:1701–14.