

Mistakes in dyspepsia and how to avoid them

Mark Fox

Dyspepsia refers to upper abdominal discomfort that is thought to arise from the upper gastrointestinal tract. Symptoms include epigastric pain or discomfort, bloating, early satiety and/or fullness after meals, repeated belching or regurgitation (often rumination), nausea and heartburn.¹ The symptoms of dyspepsia are nonspecific, but most commonly result from one of four underlying disorders: functional (nonulcer) dyspepsia, gastro-oesophageal reflux disease (GORD; 10–20% erosive esophagitis), peptic ulcer disease (5–15%) and malignancy (~1%).²



Image courtesy of M. Fox

Dyspeptic symptoms may also result from other problems, such as medication intolerance, pancreatitis, biliary tract disease or motility disorders (e.g. gastroparesis or gastric dumping).

Clinical guidelines recommend that endoscopy is not always required for diagnosis; a positive diagnosis of GORD and functional dyspepsia can be based on clinical presentation in the absence of alarm symptoms or features (see below).^{3,4} In many cases, symptoms are increased after meal ingestion (postprandial distress syndrome), being triggered by impaired gastric accommodation and visceral hypersensitivity to gastric distension.⁵ Other patients have an epigastric pain syndrome in which discomfort is independent of food intake and gastrointestinal function.⁶ There is an important overlap between functional dyspepsia and other functional gastrointestinal diseases (e.g. irritable bowel syndrome [IBS]) and chronic pain syndromes (e.g. fibromyalgia).⁷ Psychological disease (e.g. anxiety or somatization disorder) and/or psychosocial stress are also present in a significant proportion of patients who seek medical attention.^{8,9}

Notwithstanding the constructive advice provided by published reviews and guidelines, the broad definition of dyspepsia, lack of diagnostic investigations, uncertain cause of disease, psychosocial issues and paucity of specific treatments make the management of dyspepsia challenging. Here, I discuss 10 common and/or high-impact mistakes that are made in the diagnosis and treatment of patients with dyspeptic symptoms: five related to diagnosis, five related to treatment.

Mistake 1 Failure to perform endoscopy in the presence of alarm features

One of the major challenges in the proper management of patients with dyspepsia is to correctly identify when an oesophagogastro-duodenoscopy is indicated. Alarm features include: dysphagia, weight loss, an abdominal mass or lymphadenopathy, evidence of gastrointestinal blood loss or iron deficiency anaemia, recurrent vomiting, and the recent onset of dyspeptic symptoms (or a change in bowel habit) in patients who are over 45 or 55 years old (depending on local guidelines). Prospective trials and meta-analyses indicate that the presence of alarm symptoms is associated with a 5–10% risk of serious disease, compared with the 1–2% risk in patients who have no alarm symptoms.^{2,10}

20–40% of patients with functional dyspepsia report clinically relevant weight loss (>5% body

weight) at initial assessment. Early endoscopy is indicated to exclude a life-threatening pathology in this group. Endoscopy should also be performed in patients who have functional dyspepsia if alarm features develop, in patients who have severe symptoms that fail to respond to therapy and if there is an important change in symptoms during follow up.^{3,4}

If endoscopy is performed, then gastric body and duodenal biopsies should be acquired to test for *Helicobacter pylori* infection and to exclude coeliac disease, respectively. This is reasonable even if appearances are normal.

Mistake 2 Over investigation of patients with functional dyspepsia

Symptoms of chronic abdominal pain, early satiety, bloating and nausea in younger patients are characteristic of functional

dyspepsia, but are not alarm symptoms and do not normally require extensive investigation.

At presentation, guidelines recommend standard laboratory tests be performed, including a full blood count, clinical chemistry for renal and liver function, calcium, thyroid function and coeliac serology (these may not be indicated routinely in patients of non-European ethnicity). Serological tests or a urea breath test should also be performed to allow a 'test-and-treat' approach to be adopted for those who have a *H. pylori* infection.^{3,4}

Abdominal ultrasound to exclude gallbladder stones and other abdominal pathology is part of the routine evaluation in many European countries; however, the diagnostic yield is low unless there is a clinical suspicion of specific disorders.^{11,12} Computed tomography should not be performed routinely, especially in young females, to avoid unnecessary exposure to radiation.

Scintigraphy or ¹³C breath tests document abnormal gastric emptying—slow (gastroparesis) or rapid (dumping)—in up to 40% of patients with dyspepsia.¹³ The impact of these findings on treatment decisions is modest,¹³ although objective evidence of gastroparesis may predict poor response to antidepressant therapy.¹⁴ Instead, a 'drink test' that reproduces typical symptoms after ingestion of low volumes of a liquid nutrient drink (<400 mL, ~1kcal/ml) can support the diagnosis of functional dyspepsia.¹⁵

In patients who have ongoing symptoms, it is not appropriate to repeat endoscopic or other investigations without a clear indication (see 'Mistake 1'). The reassurance provided by repeated tests in patients with functional gastrointestinal disease is minimal, as is the impact they have on treatment.¹⁶

© UEG 2016 Fox.

Cite this article as: Fox M. Mistakes in dyspepsia and how to avoid them. *UEG Education* 2016; 16: 4–6.

Mark Fox is at the Abdominal Center: Gastroenterology, St. Claraspital, CH-4016 Basel, Switzerland, and leads the Zürich Neurogastroenterology and Motility Research Group, Department of Gastroenterology, University Hospital Zürich, Zürich, Switzerland. He is Chair of the International Working Group for GI Motility and Function.

Correspondence to: dr.mark.fox@gmail.com

Published online: 18 February 2016

Mistake 3 Not enquiring after psychiatric symptoms and social stress

Dyspeptic symptoms are common in the community; however, many individuals who have these symptoms do not seek medical attention. Psychiatric comorbidity (e.g. anxiety or somatization disorder)^{17,18} and external factors, such as work and social pressures, increase consultation rates for dyspeptic symptoms.^{8,9} Furthermore, psychosocial comorbidity increases negative perceptions of the condition (e.g. fear of cancer), subjective symptom severity, time off work and the likelihood that the patient will not respond to standard treatment.¹⁸ Publicly available, short questionnaires completed ahead of a consultation facilitate collection of this information (e.g. Hospital Anxiety and Depression Score [HADS], Patient Health Questionnaire [PHQ15; Somatization Score]). Awareness of these factors can clarify the causes of disease and guide the clinician towards a more holistic and effective management strategy. In general, psychiatric treatment such as cognitive behavioural therapy (CBT) should be directed at those patients who have specific issues.¹⁷

Mistake 4 Not considering eating disorders in the differential diagnosis

Dyspeptic symptoms are reported by up to 90% of patients with anorexia nervosa and can be used to excuse food refusal and distract attention from the eating disorder.¹⁹ The possibility of an eating disorder must be considered. The risk factors for eating disorders include: female sex, young adult age group, a family history of an eating disorder, an inappropriate body image (i.e. fear of being or becoming fat even though they are underweight), repeated dieting, unusual dietary beliefs or behaviours, excessive physical activity, and psychosocial stress.

Mistake 5 Mistaking vomiting for regurgitation or rumination

Many patients will label any return of food to the mouth as vomiting, but direct questioning can clarify the issue. Vomiting is often preceded by nausea and waterbrash (rush of saliva into the mouth), and involves the forceful evacuation of large volumes (>100 ml) of digested gastric contents. Regurgitation is the return of small volumes (<100 ml) of fresh or semi-digested food from the oesophagus or stomach. Regurgitation can occur in dyspeptic patients due to reflux or rumination. In those with reflux disease 'volume regurgitation' rarely occurs more than once or twice after

meals, but may also occur in bed at night. In rumination syndrome, regurgitation usually occurs multiple times after meals due to repeated voluntary, albeit subconscious, contractions of the abdominal wall muscles in response to dyspeptic symptoms.²⁰ The distinction between these conditions is important because reflux requires medical or surgical therapy, whereas rumination responds well to physiotherapy. If the clinical assessment is unclear then a definitive diagnosis can be established by observation during high-resolution manometry with a test meal.²⁰

Mistake 6 Inappropriate long-term treatment with proton pump inhibitors

Clinical guidelines recommend initial treatment of dyspepsia with a trial of proton pump inhibitor (PPI) therapy.^{3,4} This is supported by meta-analyses of published trials as summarized by a Cochrane review.²¹ Alginate-based medications (e.g. Gaviscon preparations) may also provide benefit.²² At the same time a test-and-treat approach to *H. pylori* infection is recommended.²³ Note that, although effective in well-designed trials, the absolute benefit of alginate therapy and the test-and-treat approach is modest (~10% above placebo for both treatments).²⁴

If the initial trial of PPI therapy (e.g. 2 weeks omeprazole 20 mg twice daily or equivalent) is not effective, then a second trial with a different preparation or a higher dose can be tried. However, if this is not effective, then the PPI should be stopped because of the increased risk of gastrointestinal infection, osteoporosis and other side effects, plus the costs related to long-term therapy. In functional dyspepsia patients who have heightened visceral sensitivity, PPI withdrawal can be complicated by rebound hyperacidity leading to reflux symptoms.²⁵ The same issue can arise after eradication therapy for *H. pylori* infection (note: successful *H. pylori* eradication itself does not increase the short-term to mid-term risk of reflux symptoms²⁶). In both cases, patients should be informed in advance of the possibility of rebound reflux symptoms, reassured that this is temporary and advised to take antacid or alginate to suppress symptoms.²⁷

Mistake 7 Lack of awareness regarding medication intolerance

Pharmaceutical management in patients with functional dyspepsia is complicated by a high rate of patient-reported 'medication allergies'. These reports should be questioned because true allergic reactions are rare. Many adverse reactions are actually nocebo effects (i.e.

incorrect attribution of symptoms to medication) or due to medication intolerance in patients who have heightened sensitivity to a range of stimuli. Although not dangerous, these issues can limit the use of potentially beneficial medications in patients with functional dyspepsia (e.g. antiemetics or antidepressants). Patients should be reassured that, unlike true allergies, intolerance is not dangerous and can be mitigated by commencing treatment at low doses. This is often necessary when prescribing antidepressant medications. To avoid drowsiness and anticholinergic effects, the starting dose of any antidepressant should be very low (e.g. 10–20 mg amitriptyline) and increased every 1–2 weeks by small increments. The most appropriate dose is the maximum dose tolerated by the patient (often well below that used in psychiatric medicine). The efficacy of these medications for dyspepsia does not appear to be related to the absolute dose.

Mistake 8 Inappropriate referral for abdominal surgery

The presence of gallstones in an otherwise normal gallbladder should not be considered a routine indication for surgical cholecystectomy.^{28–30} Similarly, as for patients without functional dyspepsia, a clear indication for appendectomy and other abdominal procedures (e.g. ovarian cystectomy) is required. If surgery is performed without definitive evidence of surgical pathology, then the success of any operation is very low and severe, postsurgical exacerbation of functional gastrointestinal symptoms is common.³¹

Mistake 9 Failure to consider multidisciplinary management

The causes of dyspepsia are many and patient responses to dyspeptic symptoms are varied, including dietary change and physical and alternative therapies (e.g. yoga or acupuncture).³² If the resources are available, then a multidisciplinary approach that can address an individual patient's needs and wants has many advantages. Dieticians are required to introduce an effective exclusion diet (e.g. FODMAP diet) that maintains nutritional requirements. This is necessary because many patients find it difficult to identify foods that trigger their symptoms.³³ Similarly, physiotherapists can teach abdominal breathing exercises and relaxation techniques that are effective for the treatment of functional bloating and of rumination syndrome.^{20,34} The support of psychiatric services is appropriate for patients with major depression, an anxiety disorder or eating disorder who can present with dyspeptic symptoms.^{17,18}

Mistake 10 Ineffective doctor–patient communication

An effective and trusting doctor–patient relationship is the basis for successful management of functional gastrointestinal disease. If such a relationship is in place, then presenting the patient with a clear diagnosis, an explanation of what causes symptoms and simple advice about how to self manage the condition may be all that is required. For the related condition of functional noncardiac chest pain, it has been shown that well-informed patients are more satisfied, cope with symptoms better and seek medical attention less frequently.³⁵ These findings were independent of the final diagnosis and disease severity.³⁵ By contrast, there is very little evidence that comprehensive investigation provides lasting reassurance in this patient group. Good communication is an essential part of any treatment plan!

Acknowledgements: The author is grateful to Werner Schwizer and other members of the Zürich Neurogastroenterology and Motility Research Group for sharing their experience of managing patients with functional dyspepsia and for pointing out mistakes made in his practice and their own practice!

Conflicts of interest: The author declares there are no conflicts of interest.

References

- Tack J and Talley N. Functional dyspepsia: symptoms, definitions and validity of the Rome III criteria. *Nat Rev Gastroenterol Hepatol* 2013; 10: 134–141.
- Ford AC, Marwaha A, Lim A, et al. What is the prevalence of clinically significant endoscopic findings in subjects with dyspepsia? Systematic review and meta-analysis. *Clin Gastroenterol Hepatol* 2010; 8: 830–837.e2.
- NICE Clinical Guideline 184. Gastro-oesophageal reflux disease and dyspepsia in adults: investigation and management. September 2014.
- Talley N and Vakili N. Guidelines for the management of dyspepsia. *Am J Gastroenterol* 2005; 100: 2324–2337.
- Farré R, Vanheel H, Vanuytsel T, et al. In functional dyspepsia, hypersensitivity to postprandial distention correlates with meal-related symptom severity. *Gastroenterology* 2013; 145: 566–573.
- Vanheel H, Vanuytsel T, Van Oudenhove L, et al. Postprandial symptoms originating from the stomach in functional dyspepsia. *Neurogastroenterol Motil* 2013; 25: 911–e703.
- Ford AC, Marwaha A, Lim A, et al. Systematic review and meta-analysis of the prevalence of irritable bowel syndrome in individuals with dyspepsia. *Clin Gastroenterol Hepatol* 2010; 8: 401–409.
- Hungin AP, Hill C and Raghunath A. Systematic review: frequency and reasons for consultation for gastro-oesophageal reflux disease and dyspepsia. *Aliment Pharmacol Ther* 2009; 30: 331–342.
- Ford AC, Forman D, Bailey AG, et al. Initial poor quality of life and new onset of dyspepsia: results from a longitudinal 10-year follow-up study. *Gut* 2007; 56: 321–327.
- Kapoor N, Bassi A, Sturgess R, et al. Predictive value of alarm features in a rapid access upper gastrointestinal cancer service. *Gut* 2005; 54: 40–45.
- Horowitz N, Moshkowitz M, Leshno M, et al. Clinical trial: evaluation of a clinical decision-support model for upper abdominal complaints in primary-care practice. *Aliment Pharmacol Ther* 2007; 26: 1277–1283.
- Heikkinen M, Pikkarainen P, Takala J, et al. Etiology of dyspepsia: four hundred unselected consecutive patients in general practice. *Scand J Gastroenterol* 1995; 30: 519–523.
- Stanghellini V and Tack J. Gastroparesis: separate entity or just a part of dyspepsia? *Gut* 2014; 63: 1972–1978.
- Talley NJ, Locke GR, Saito Y, et al. Effect of amitriptyline and escitalopram on functional dyspepsia: A multicenter, randomized controlled study. *Gastroenterology* 2015; 149: 340–349.e2.
- Boeckxstaens GE, Hirsch DP, Van Den Elzen BD, et al. Impaired drinking capacity in patients with functional dyspepsia: relationship with proximal stomach function. *Gastroenterology* 2001; 121: 1054–1063.
- Spiegel BM, Gralnek IM, Bolus R, et al. Is a negative colonoscopy associated with reassurance or improved health-related quality of life in irritable bowel syndrome? *Gastrointest Endosc* 2005; 62: 892–899.
- Soo S, Forman D, Delaney BC, et al. A systematic review of psychological therapies for nonulcer dyspepsia. *Am J Gastroenterol* 2004; 99: 1817–1822.
- Drossman DA, Whitehead WE, Toner BB, et al. What determines severity among patients with painful functional bowel disorders? *Am J Gastroenterol* 2000; 95: 974–980.
- Santonicola A, Siniscalchi M, Capone P, et al. Prevalence of functional dyspepsia and its subgroups in patients with eating disorders. *World J Gastroenterol* 2012; 18: 4379–4385.
- Tucker E, Knowles K, Wright J, et al. Rumination variations: aetiology and classification of abnormal behavioural responses to digestive symptoms based on high-resolution manometry studies. *Aliment Pharmacol Ther* 2013; 37: 263–274.
- Delaney B, Ford AC, Forman D, et al. Initial management strategies for dyspepsia. *Cochrane Database Syst Rev* 2005; 4: CD001961.
- Thomas E, Wade A, Crawford G, et al. Randomised clinical trial: relief of upper gastrointestinal symptoms by an acid pocket-targeting alginate-antacid (Gaviscon Double Action)—a double-blind, placebo-controlled, pilot study in gastro-oesophageal reflux disease. *Aliment Pharmacol Ther* 2014; 39: 595–602.
- Delaney BC, Qume M, Moayyedi P, et al. *Helicobacter pylori* test and treat versus proton pump inhibitor in initial management of dyspepsia in primary care: multicentre randomised controlled trial (MRC-CUBE trial). *BMJ* 2008; 336: 651–654.
- Wang WH, Huang JQ, Zheng GF, et al. Effects of proton-pump inhibitors on functional dyspepsia: a meta-analysis of randomized placebo-controlled trials. *Clin Gastroenterol Hepatol* 2007; 5: 178–185.
- Reimer C, Søndergaard B, Hilsted L, et al. Proton-pump inhibitor therapy induces acid-related symptoms in healthy volunteers after withdrawal of therapy. *Gastroenterology* 2009; 137: p. 80–87.
- Schwizer W, Menne D, Schütze K, et al. The effect of *Helicobacter pylori* infection and eradication in patients with gastroesophageal reflux disease: a parallel-group, double-blind, placebo-controlled multicenter study. *United European Gastroenterology Journal* 2013; 1: 226–235.
- Fox M and Forgacs I. Gastro-oesophageal reflux disease. *BMJ* 2006; 332: 88–93.
- Mertens MC, De Vries J, Scholtes VP, et al. Prospective 6 weeks follow-up post-cholecystectomy: the predictive value of pre-operative symptoms. *J Gastrointest Surg* 2009; 13: 304–311.
- Luman W, Adams WH, Nixon SN, et al. Incidence of persistent symptoms after laparoscopic cholecystectomy: a prospective study. *Gut* 1996; 39: 863–866.
- Fenster LF, Lonborg R, Thirlby RC, et al. What symptoms does cholecystectomy cure? Insights from an outcomes measurement project and review of the literature. *Am J Surg* 1995; 169: 533–538.
- Sperber AD, Morris CB, Greenberg L, et al. Development of abdominal pain and IBS following gynecological surgery: a prospective, controlled study. *Gastroenterology* 2008; 134: 75–84.
- Lacy BE, Weiser KT, Kennedy AT, et al. Functional dyspepsia: the economic impact to patients. *Aliment Pharmacol Ther* 2013; 38: 170–177.
- Böhn L, Störsrud S, Törnblom H, et al. Self-reported food-related gastrointestinal symptoms in IBS are common and associated with more severe symptoms and reduced quality of life. *Am J Gastroenterol* 2013; 108: 634–641.
- Barba E, Burri E, Accarino A, et al. Abdominothoracic mechanisms of functional abdominal distension and correction by biofeedback. *Gastroenterology* 2015; 148: 732–739.
- Ward BW, Wu WC, Richter JE, et al. Long-term follow-up of symptomatic status of patients with noncardiac chest pain: is diagnosis of esophageal etiology helpful? *Am J Gastroenterol* 1987; 82: 215–218.

Your dyspepsia briefing

Online courses

- ‘Dyspepsia’ from UEG [<https://www.ueg.eu/education/courses/online-courses/dyspepsia/>].

UEG Week sessions

- ‘First-line approach to dyspepsia’ at UEG Week 2015 [<https://www.ueg.eu/education/session-files/?session=1428&conference=109>].
- ‘New thoughts on functional dyspepsia’ at UEG Week 2014 [<https://www.ueg.eu/education/session-files/?session=1159&conference=76>].
- ‘Progress in dyspepsia and gastroparesis’ at UEG Week 2014 [<https://www.ueg.eu/education/session-files/?session=1128&conference=76>].
- ‘Dyspepsia: What’s new in 2014?’ at UEG Week 2014 [<https://www.ueg.eu/education/session-files/?session=1285&conference=76>].
- ‘Pathophysiology and investigation’ UEG Postgraduate Teaching 2013 at UEG Week 2013 [<https://www.ueg.eu/education/session-files/?session=1023&conference=33>].
- ‘Primary care perspective: Initial management of dyspepsia’ UEG Postgraduate Teaching 2013 at UEG Week 2013 [<https://www.ueg.eu/education/>].

document/primary-care-perspective-initial-management-of-dyspepsia/100746/].

- ‘What is dyspepsia? What is bloating? Definitions and differential’ UEG Postgraduate Teaching 2013 at UEG Week 2013 [<https://www.ueg.eu/education/document/what-is-dyspepsia-what-is-bloating-definitions-and-differential/100739/>].
- ‘Ulcers and tumours: “organic” causes of dyspepsia and bloating’ UEG Postgraduate Teaching 2013 at UEG Week 2013 [<https://www.ueg.eu/education/document/ulcers-and-tumours-organic-causes-of-dyspepsia-and-bloating/100741/>].
- ‘Functional causes of dyspepsia and bloating’ UEG Postgraduate Teaching 2013 at UEG Week 2013 [<https://www.ueg.eu/education/document/functional-causes-of-dyspepsia-and-bloating/100742/>].
- ‘Dyspepsia in the community’ at UEG Week 2012 [<https://www.ueg.eu/education/session-files/?session=499&conference=30>].

European guidelines

- NICE Clinical Guideline 184. Gastro-oesophageal reflux disease and dyspepsia in adults: investigation and management. September 2014 [<http://www.nice.org.uk/guidance/cg184>].