

FAST FACTS

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**Indispensable
Guides to
Clinical
Practice**

Dyspepsia

Second edition

by Kenneth L Koch
and Michael J Lancaster Smith

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Gastroesophageal reflux disease	16
<i>Helicobacter pylori</i>	33
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Dyspepsia

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Glossary

Achalasia: a condition in which the normal muscular activity of the esophagus is disturbed, delaying the passage of swallowed material

Achlorhydria: absence of free hydrochloric acid in the stomach

Barrett's epithelium: columnar cell lining of the esophagus instead of normal squamous cells, induced by chronic acid reflux. It is associated with an increased incidence of cancer

CLO test: test for *Campylobacter*-like organism, the old description of *H. pylori* before it was reclassified

Cox-1 / -2: cyclooxygenase-1 / -2

Dysphagia: a condition in which the action of swallowing is difficult to perform or in which swallowed material seems to be held up in its passage to the stomach

EKG: electrogastrogram, a recording of the myoelectrical rhythm of the stomach

Eradication treatment: pharmacological therapy that aims to eradicate *H. pylori* from the stomach. Most commonly used regimens comprise a proton-pump inhibitor and two antibiotics, given over 7 days

Esophagitis: inflammation of the esophagus usually due to excessive exposure to refluxed gastric acid

Gastroparesis: paralysis of the stomach resulting in delayed gastric emptying

GERD (GORD in the UK): gastroesophageal reflux disease

LES (LOS in the UK): lower esophageal sphincter. Normal LES pressure is 12–40 mmHg

MALT: mucosa-associated lymphoid tissue

Meckel's diverticulum: a pouch in the wall of the distal ileum; it is a congenital abnormality

Nissen fundoplication: the most commonly performed surgical procedure for GERD; the gastric fundus is wrapped around itself and the distal esophagus and any hiatal hernia is reduced

Odynophagia: pain on swallowing, rather than a burning sensation rising into the retrosternal area

PPI: proton-pump inhibitor

Torsade de pointes: tachycardia in which the electrical stimulation of the heart undergoes a cyclical variation in strength; it gives a characteristic pattern of twisted spikes on the electrocardiogram

UBT: urea breath test, a non-invasive test for establishing current *H. pylori* infection

UGI: upper gastrointestinal

Zollinger–Ellison syndrome: condition characterized by excess production of gastrin usually due to a G-cell tumor of the pancreas; this leads to hypersecretion of gastric acid and ulceration of the esophagus, stomach, duodenum and jejunum

Introduction

The term 'dyspepsia' defies precise definition, but is generally understood to mean symptoms suggestive of upper gastrointestinal (UGI) disease (Table 1). Symptoms associated with changes in bowel habit or defecation are excluded from the definition of dyspepsia and are classified as components of irritable bowel syndrome. Dyspepsia may be caused by many conditions, including diseases of the pancreas and biliary system, but the majority of patients with dyspepsia have an organic or functional disorder of the upper alimentary tract (Table 2). Heartburn and regurgitation have such a strong association with gastroesophageal reflux that they are now excluded from the classification of dyspepsia.

Dyspepsia is extremely common in Western society, with a prevalence of 25–40% over a 6–12-month period. Only 25% of sufferers consult a doctor; they do so not only as a result of symptom severity, but also because of concern about potentially sinister disease.

Although dyspepsia accounts for approximately 5% of family physician consultations in the USA and UK, only a fraction of patients are referred to specialists. In the UK, for example, only about 10% of patients with dyspepsia are referred for specialist investigation. Despite this, annually 2% of the UK population undergo UGI endoscopy or barium-meal examination.

Although in most cases dyspepsia is the consequence of benign disease, it is the cause of significant reduction in the quality of life.

The economic consequences of dyspepsia are impressive. In the UK, nearly 9 million prescriptions were written for H₂-receptor antagonists

TABLE 1

Symptoms of dyspepsia

- Upper abdominal pain/discomfort
- Anorexia
- Early satiety
- Bloating
- Nausea and/or vomiting

TABLE 2

Definitions of dyspepsia

Organic dyspepsia

Symptoms due to specific abnormalities that are confirmed by diagnostic tests, either:

- morphological (peptic ulcer, gastroesophageal carcinoma, esophagitis detected by endoscopy) or
- pathophysiological (esophageal reflux detected by pH monitoring, gastroparesis detected by solid-phase gastric emptying tests)

Functional dyspepsia: ulcer-like and dysmotility-like

Symptoms for which mechanisms have been proposed but as yet are poorly understood and for which confirmatory investigations are now being introduced. Probable mechanisms include:

- delayed gastric emptying
- uncoordinated relaxation of the gastric fundus
- hypersensitivity to gastric distension
- gastric dysrhythmias

Non-ulcer dyspepsia

- In the past this has meant ulcer-like symptoms in the absence of proven ulcer. It is a confusing term and ideally should be discarded.

in 1993. In the same year, over £400 million was spent on ulcer-healing drugs. In addition, sales of over-the-counter antacids accounted for £65 million. Worldwide expenditure on ulcer drugs for 1998 was approximately 11 billion US\$; 4 billion US\$ were spent on proton-pump inhibitors alone, of which nearly 50% were consumed in the USA.

Indirect costs and social consequences of dyspepsia are more difficult to measure. A UK survey in 1994 revealed that 40% of those with gastroesophageal reflux, 46% of gastric ulcer sufferers and 59% of duodenal ulcer patients had lost time from work in the previous 12 months because of their disease. By contrast there is evidence that appropriate treatment results in a lower rate of consultation and reduced healthcare costs.

Fast Facts – Dyspepsia provides an up-to-date account of our understanding of the main causes of dyspepsia and their management in the context of general practice.

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Patients with dyspepsia are not a homogeneous group, and their management therefore depends upon selection and prioritization.

Patients not requiring immediate investigation

Patients under the age of 45 years with a short history of dyspepsia may be treated empirically for 4–6 weeks, in the absence of alarm symptoms (Table 1.1). This approach prevents unnecessary investigation of many young patients with so-called ‘self-limiting’ dyspepsia and supposedly reduces management costs and inconvenience. Such a policy is valid provided:

- a significant proportion of young dyspeptics fall into this category
- the majority do not return because symptoms resolve or are subsequently controlled by over-the-counter drugs and lifestyle changes.

The overall success of this approach depends on:

- appropriate selection of patients
- the physician’s clinical diagnostic skills
- the physician’s ability to reassure and convince the patient that immediate investigation is unnecessary.

If not applied appropriately, however, the ‘treat-before-investigation’ approach may delay optimal management and prove less cost-effective. Doubts about this empirical approach have been strengthened by a study that randomized uninvestigated dyspeptics to early endoscopy or H₂-receptor antagonists therapy without investigation. At 12 months,

TABLE 1.1

Alarm symptoms

- | | |
|--------------------------|-----------------------|
| • Anemia | • Bleeding |
| • Dysphagia | • Persistent vomiting |
| • Weight loss / anorexia | |

costs were greater and satisfaction was lower in the empirically treated group. Furthermore the majority of the latter patients eventually underwent endoscopy because of recurrent symptoms.

Symptom clusters. In the recent past it was proposed that clusters of symptoms might be used as a guide to initial therapy of dyspepsia in young, uninvestigated patients (Table 1.2). This approach to early management was advocated on the assumption that, in each of these categories, the implied pathogenesis was operative in a substantial number of patients and that drug therapy selected on this basis had a reasonable chance of being effective. However, initial enthusiasm has been dampened by more critical studies. These have shown that there is substantial overlap between the cluster subgroups, poor correlation with subsequent investigation findings and ineffectiveness of therapy based on the implied diagnosis.

It is now accepted that heartburn is an accurate indication of gastroesophageal reflux, which may be appropriately confirmed by

TABLE 1.2

Symptom clusters in uninvestigated dyspepsia and gastroesophageal reflux disease

Gastroesophageal reflux disease-like

- Heartburn
- Regurgitation

Ulcer-like

- Localized epigastric pain
- Nocturnal pain
- Relief with antacids or vomiting

Dysmotility-like

- Poorly localized upper abdominal discomfort
- Early satiety
- Bloating
- Nausea

Although spiral bacteria in the stomach have been reported by numerous observers since the 19th century, it was not until 1982 that Marshall and Warren cultured the organism that was later to be named *Helicobacter pylori* and which today is known to be prevalent worldwide (Figure 3.1). They and others rapidly recognized its close association with gastritis and peptic ulceration; more recently, its etiological importance in gastric carcinoma and B-cell mucosa-associated lymphoid tissue (MALT) lymphoma has been established (Figure 3.2). There can be few discoveries that have so dramatically changed our understanding and management of such universal diseases.

Bacteriological features

H. pylori is a spiral, flagellate, Gram-negative, micro-aerophilic bacterium. It is uniquely adapted to survive in the hostile environment

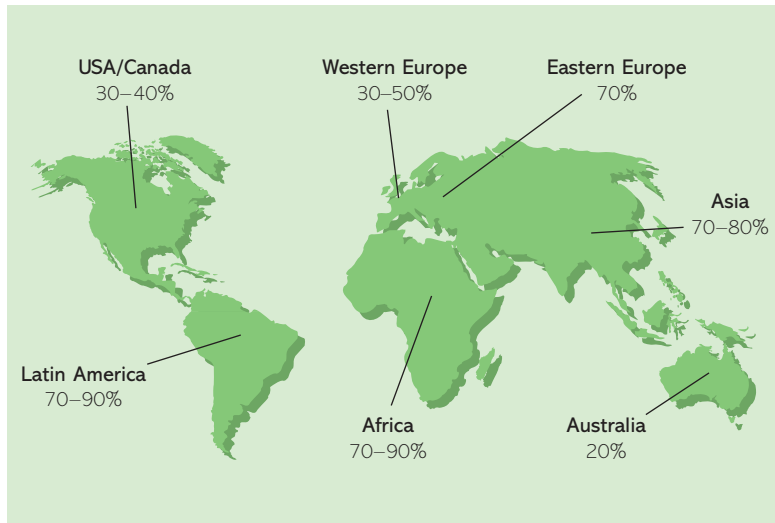


Figure 3.1 *H. pylori* is a ubiquitous organism with highest prevalence rates in the developing world. Reproduced with permission from Marshall BJ. *JAMA* 1995; 274:1064–6. © American Medical Association.

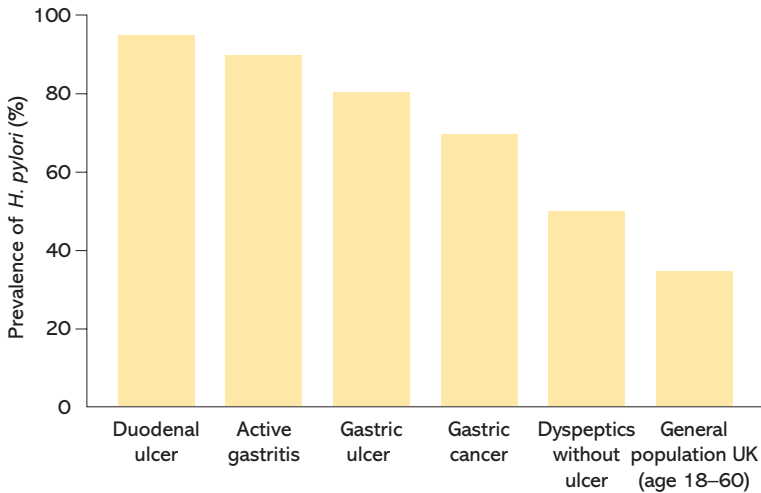


Figure 3.2 There is a strong association between peptic ulcer, gastritis, gastric malignancy and *H. pylori* infection.

of the stomach. The bacterium establishes itself by excluding acid from its immediate surroundings. It does so by converting naturally-occurring urea into carbon dioxide and ammonia, and expelling hydrogen ions using its own proton pump.

H. pylori is highly motile, so it is able to exist in both the gastric lumen and the mucus gel layer. It also possesses powerful adhesins, by which it attaches firmly to gastric epithelial cells where release of toxins initiates tissue damage and inflammation. It shows considerable diversity of toxin production, which probably explains why certain strains are more strongly associated with gastroduodenal diseases than others.

Infection: when, who and how

Age of infection. In the Western world, the prevalence of infection increases with age (Figure 3.3). However, it now seems that rather than being due to a steady acquisition of infection during adult life, this reflects a cohort effect. The elevated level of infection in those who are now elderly is the result of a high incidence of infection when they were young. Similarly, the lower prevalence in today’s younger adults is the result of a falling incidence of infection during their childhood and